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## RESULTS OF THE WORK OF THE COMMISSION ON MEDICAL EDUCATION


SAMUEL P. CAPEN, PH.D.
Chancellor, University of Buffalo
BUFFALO


Educational reforms can be brought about in a number of different ways. One way is by decree. That way is quick and relatively easy, provided agencies exist to issue and enforce the decree.

Up to twenty-five years ago, reform by decree had not been tried very extensively in America. The machinery for it was lacking. The federal government exercised no authority over education, and, except in a single state, no comprehensive scheme of state control had been developed. Indeed, the state's obligation to protect the public against malpractice in those professions that deal with health and property had only just been begun to be taken seriously. In attempting to afford this protection, however, the state concerned itself solely with the individual practitioner and not with the school that trained him.

Then suddenly, just about twenty-five years ago, the possibility of effecting educational reform by decree, even in the absence of governmental agencies of control, was demonstrated. The Council on Medical Education and Hospitals, which had been created by the American Medical Association in 1904, showed how it could be done. The place of the Council in American educational history is secure—and prominent. I doubt whether responsibility for so much that is momentous in the recent development of higher education can be traced to any other body. At the risk of repeating some things that are familiar, I will note a few of the most important consequences of its activities.

No other phase of American education has ever been so drastically reformed in so short a time as was medical education. In 1904 the vast majority of medical schools were with respect to requirements for entrance and instructional procedure scarcely above the level of trade schools. By 1918, medical education had been generally transformed into a university enterprise—on the whole the most consistently excellent enterprise that the universities conducted. In detail, this transformation meant that within a period of less than fifteen years the following things had happened: The number of medical schools had been reduced 50 per cent. The number of medical students had likewise been reduced in approximately the same proportion. Precise standards applying to students, teaching staff, equipment and hospital facilities had received general recognition and were being rigidly enforced. The content of premedical education had been defined. The medical curriculum had been prescribed.

To the Council belongs the principal credit for these happenings. It was the motivating force in bringing them to pass, even when it was not the active executive agent. (The Association of American Medical Colleges, for example, had concerned itself with matters relating to the curriculum and teaching methods.) But in accomplishing the reform of medical education the Council also unintentionally became the initiator of a great movement in which the whole American university system is still caught up.

For years, educational leaders had been seeking some method of dealing authoritatively and expeditiously with educational issues that are not local, that are not even state issues, but are national. How could flagrant abuses be remedied, dishonesty and greed be suppressed, woful inadequacies be repaired? The Council on Medical Education and Hospitals seemed to have hit on a method for achieving these ends. It could be applied at once to alter the practice of any group of institutions. And it was of the utmost simplicity. Of what did the method consist? A statement of standards, classification, publicity, the finger of scorn—it was an irresistible sequence, provided the classifying body was large enough or representative enough or possessed of enough real or artificial prestige. No institution could long stand out against it. Pride and fear, as well as respect for the classifying agency, all combined to induce conformity.

I do not go so far as to say that if it had not been for the Council on Medical Education and Hospitals there would have been no standardizing movement in American higher education. Something of the sort was bound to come because it was needed. Even before the Council issued its first publications, tentative experiments looking in the same direction, although on a smaller scale, were in progress. But the dramatic and brilliant success of the Council's undertaking relieved all other educational bodies of the necessity of taxing their ingenuity further. The prescription for reform by decree had been found. The formula for a control as absolute as that exercised by any of the governmental bureaucracies of other countries had been discovered. All that any agency interested in changing educational practices needed now to do was to imitate the Council as closely as possible. And for two decades American university education has been under the sway of the Council's imitators. Colleges of liberal arts have been defined and classified by a variety of bodies having a variety of different, and occasionally conflicting, conceptions of college education. Associations of practitioners or teachers—and sometimes both together—representing law, dentistry, pharmacy,


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architecture and librarianship have prescribed standards for schools preparing for these professions and enforce the standards through classification and publicity. Bodies representing other professions are already in the early stages of the same procedure. In short, the Council on Medical Education and Hospitals reformed not medical education alone. Through the influence of its example it has brought about the general reform of professional education. And the progress that has been made in the elevation of professional education in other fields is only a little less remarkable than the great upswing in medical education.

It is well known that these developments have been accompanied by a spectacular increase in university costs; an increase in unit costs as well as in total costs. The Council on Medical Education and Hospitals and its associated bodies cannot escape a portion of the responsibilty for the new scale of university expenditure. Twenty-five years ago, medical education nearly everywhere cost too little. I will not say that it now nearly everywhere costs too much; I will merely point out that the rate of increase has been fantastic. Twenty-five years ago, no one could have imagined the possibility of securing for any university division that served only a few students such stupendous sums as are now invested in medical teaching plants. Just as incredible would have seemed the staggering maintenance charges, which make the current per capita costs of medical education so high. The establishment of schools of medicine on this plane has been a challenge to every other professional interest. As fast as possible the outlays for equipment, teaching and research in several other lines of professional education have been forced up in order that these undertakings may not suffer by comparison with medical education.

These great reforms in medical education, which carried with them the profound changes in university polity that I have tried to sketch, soon reached a second stage. And this second stage is quite as instructive as the first. The second stage was crystallization. The standards set up by the Council dealt with things that could be measured and counted: with time, money, numbers of people, physical equipment. They did not change fundamentally with the years; the required quantities were simply increased. They were restrictive rather than stimulating. The prescriptions of the Association of American Medical Colleges which related to the curriculum likewise tended to inhibit any extensive changes. Moreover, as the standards of the Council and the association took shape they were rapidly translated into state regulations; here and there into state laws. By 1920 the medical schools of the country were in a strait jacket composed of specific and detailed requirements, many of them quite mechanical and some of them obsolete. The schools no longer approved the requirements and yet they could see no avenue of escape.

Thus the university system of America received at the hands of medical education another important lesson. It was now demonstrated that reform by decree, though quick and easy and spectacular, is of strictly limited applicability. A decree—particularly the type of decree developed by voluntary standardizing agencies—is a primitive instrument, a kind of policeman's club. It can bring about crude and primitive changes; and where these are required it is an indispensable weapon. It should be held in reserve for such uses. But medical education was now long past this point. Obviously, it could not be helped by a new decree. The fact that no one suggested this remedy is illuminating.

What had the problem of medical education come to be? In a word, it was how to continue to grow. How to recast and keep on recasting the scientific and technical materials of instruction so as to incorporate in them the essential parts of the new discoveries that are constantly being made and the new points of view that are being developed. How to articulate itself with university aims and methods that are undergoing a complete alteration. How to adjust itself to a changed and constantly changing social setting. The conviction spread among all the parties at interest, associations, state boards and university officers, that there was but one promising way to attack the problem. That was to examine medical education anew with a view to establishing inductively the principles that should guide its future progress. Interpreting this general sentiment, the Association of American Medical Colleges took the action which led to the organization of the Commission on Medical Education in 1925. The commission immediately appointed Dr. Willard C. Rappleye as its director of study. In the years 1927 to 1930 inclusive it issued six interim reports. With the publication of its final report in 1932 the commission disbanded.

What are the results of this seven-year undertaking? I doubt whether any one yet knows. Great changes have taken place in medical education since 1925. How far the commission is responsible for these, probably nobody could say. The members of the commission would be the last to claim credit for developments in which associations and schools and state boards have all cooperated. But a few significant results of the commission's work seem to be beyond dispute. Some of these are, I hope, significant not for medical education alone but for higher education in general. I would classify these results under four rubrics:

1. The circumstances of the creation and support of the commission itself were unique in educational history, and they are suggestive for future enterprises of this sort. It was established as an absolutely independent body, responsible to no one and reporting to the world at large. Its membership was representative of every interested group, professional, governmental, scientific and educational. A large part of its support came from the voluntary contributions of the medical schools of the United States and Canada, to which were added the liberal subscriptions of the American Medical Association, the Rockefeller Foundation, the Carnegie Corporation and the Macy Foundation.

2. The commission investigated exhaustively a number of situations that had long been the field of controversy. By publishing the facts it settled these controversies, at least for the present. Let me recall several of these factual studies. Whether there is now, or is to be, an oversupply or an undersupply of physicians, and how far their distribution is faulty, need no longer be matters of debate. The facts are now known. It is known also that a shortened medical course to prepare a lower order of physicians to serve the rural areas is neither necessary nor practicable. The present extent of specialization is known. More circumstantial and extensive data than have ever been assembled before are now at hand bearing on that most important question for medical education; namely, Of what does the general practitioner's practice consist?

3. These statistical studies were reinforced by another group of investigations not quantitative but interpretative and critical, designed to furnish a base for constructive reforms. For example, there is Dr. Rappleye's invaluable monograph on Medical Education in Europe. Postgraduate education is informatively and suggestively discussed and placed in a new setting. Both the medical course and premedical education are subjected to extended but sympathetic critiques. Obsolescent requirements, mistakes of emphasis and method are pointed out and new principles are proposed. Current practices are judged by their effectiveness in contributing to the central aim of the medical course. That aim, the commission declares repeatedly, is not to produce a finished physician but to equip the student to begin the practice of medicine.

4. The most important contribution of the commission was, I believe, the point of view which it consistently represented. This point of view was revealed in its earliest actions. At its first meeting, in October, 1925, "it suggested to the Federation of State Medical Boards and to the Association of American Medical Colleges that a truce of a limited number of years be established, during which any member of the Association might experiment with medical education without penalty to its graduates. The suggestion was adopted by both bodies."[1] The response of the medical schools to this grant of freedom was immediate and widespread. More extensive and fruitful experimentation has been carried on in the last seven years than in any previous period of similar length. Subsequent votes of the Federation of State Medical Boards in 1929 and 1930 confirmed this first tentative action and gave the schools a permanent charter of liberty with respect to curriculum and educational requirements.

Of a piece with its intercession with the boards and the association was the commission's early decision not to recommend a new curriculum. In the end it went further still. It decided not to recommend anything. It was unwilling to advocate any procedure or device that could later be transformed into a regulation. It preferred to confine itself to a record of facts and a formulation of such principles as clearly derived from the facts.

In short, the commission's point of view was evolutionary rather than bureaucratic. It took the position that to build and maintain a scheme of professional education is an endless task. There is no stopping point. Never can we say, "Now it is done, let us cast it into law." Always it must be recast to meet new and unforeseen social conditions, rearranged to accommodate the growth of knowledge. Especially is this true of medical education, for year by year science recreates medicine; year by year society's demands on the physician change. If the commission can have established its point of view and can have given currency to its method of dealing with educational problems as these continue to emerge, it will have begun a new era in medical education.

But I am hopeful that it will have done more. I am hopeful that other agencies of professional education will note both the circumstances that gave rise to the appointment of the commission and the conclusions at which it arrived, and will govern themselves accordingly. That would be appropriate. Medical education led the university world into the wilderness of standardization and regulation. It should reveal the way out.

1. Final Report of the Commission on Medical Education, p. 4.

# TREATMENT OF BURNS WITH GENTIAN VIOLET

## PRELIMINARY REPORT

J. H. CONNELL, M.D.
T. J. FATHERREE, M.D.; C. B. KENNEDY, M.D.
AND
G. H. McSWAIN, M.D.
NEW ORLEANS

Following the suggestion of Aldrich,[1] we have treated burns with a 1 per cent aqueous solution of gentian violet. Since the results in general were satisfactory, we have made an attempt, which we believe to be successful, to improve the technic of the use of the dye.

According to Aldrich, gentian violet aqueous solution is best applied by means of a swab or a spray in order to cover the denuded surface completely. This procedure is repeated every two hours for the first twenty-four, during which time a fine "eschar" is formed. Aldrich recommends the method for both clean and infected areas after sufficient débridement has been done.

Our series represents fifteen treated cases, each patient having a first, second or third degree burn covering from 5 to 35 per cent of the surface of the body. Ten cases were treated by the method of Aldrich. The remaining five were treated by our method, which is described in this report. The accompanying table presents brief clinical data regarding each case.

Complete cytologic and chemical studies of the blood were made in all cases. Low chloride and high corpuscular concentrations were found, corroborating the observations of other workers. In every case in which the burned area occupied 10 per cent or more of the surface of the body, the chloride content, expressed as sodium chloride, was well under 400 mg. per hundred cubic centimeters of blood, and the corpuscular concentration was over 56 per cent. The regulation of these factors constituted an additional routine in the treatment of our cases. Dextrose and nonprotein nitrogen determinations and white and red blood cell counts were made, which did not, however, give any information that was especially beneficial to us in the treatment.

We found no reports in the literature of blood sedimentation rates in cases of burns, but we found that this procedure gave us information of inestimable importance in carrying out the treatment and in establishing the prognosis. A report correlating clinical observations with sedimentation rates and blood concentration determinations will be made the subject of a future communication.

## RESULTS OF TREATMENT

The rationale of the treatment of any burned area is influenced necessarily by many factors. We believe that infection plays the major rôle in the so-called toxemia of burns. If this is true, agents that are more antiseptic than the medicaments in general use at the present time must be employed. Apparently, streptococci are the micro-organisms that are chiefly concerned in bringing about the toxic state. We have repeatedly isolated pure strains of this germ from under

From the Departments of Pathology of the Louisiana State University Medical Center and of the Charity Hospital.

1. Aldrich, R. H.: The Rôle of Infection in Burns: The Theory and Treatment with Special Reference to Gentian Violet, New England J. Med. **208**: 299-309 (Feb. 9) 1933.

the eschars of burned areas, especially in those cases in which toxic manifestations were present.

Gentian violet, or triphenylmethylamine, a coal tar derivative, is a strong antiseptic specific for the pyogenic, gram-positive organisms. In addition, especially when used as recommended in this report, it answers previously established criteria for the treatment of burns in that it produces immediate analgesia in the burned area, it forms a firm and adherent but pliable dressing which protects the affected surface, and it prevents further exudation with resultant dehydration or further extrinsic contamination from bacteria.

In our series of fifteen treated cases, we had one fatality. The patient was a poorly developed, mute child, aged 8 years. Thirty-five per cent of the surface of the body was burned in the second and third degrees, and at the time of the accident the child was suffering also from a definite infection of the bronchorespiratory tract. The temperature on admission was 104 F. Twenty-four hours after treatment with aqueous gentian violet, the temperature dropped to 99.8 F. and remained approximately at that point until the seventh day, when bronchopneumonia developed, and death occurred on the tenth day. The necropsy revealed no evidence of any pathologic condition in the suprarenal glands, the kidneys or the liver.

*Treatment and End-Results in Fifteen Cases of Burns*

| Case | Age | Degree of Burn | Part of Body* | Area Burned† | Infection On Admission | Previous Treatment | Treatment | End-Result |
|---|---|---|---|---|---|---|---|---|
| 1 | 15 | 1 & 2 | L | 9% | Absent | None | Aqueous | Excellent |
| 2 | 35 | 1 & 2 | A | 6% | Present | None | Aqueous | Excellent |
| 3 | 24 | 1 & 2 | A | 6% | Present | None | Aqueous | Excellent |
| 4 | 12 | 2 & 3 | A | 10% | Present | None | Aqueous | Excellent |
| 5 | 60 | 2 & 3 | L,T | 14% | Absent | Amertan | Aqueous | Partial failure |
| 6 | 8 | 2 & 3 | A,L,T | 39% | Absent | None | Aqueous | Death |
| 7 | 44 | 1 & 2 | A,F | 3% | Absent | Tannic acid | Aqueous | Partial failure |
| 8 | 5 | 1 & 2 | A | 3% | Absent | None | Aqueous | Excellent |
| 9 | 22 | 1 & 2 | L | 3% | Present | None | Aqueous | Excellent |
| 10 | 35 | 1 & 2 | L | 7% | Absent | None | Aqueous | Excellent |
| 11 | 2 | 1 & 2 | A | 7% | Absent | None | Jelly | Excellent |
| 12 | 7 | 1 & 2 | A,T,L | 9% | Absent | Tannic acid | Jelly | Good |
| 13 | 1½ | 1 & 2 | L | 5% | Absent | None | Jelly | Excellent |
| 14 | 52 | 1 & 2 | L | 3% | Absent | None | Jelly | Excellent |
| 15 | 63 | 2 & 3 | A,T | 3% | Absent | None | Jelly | Excellent |

* In this column, F indicates face; T, trunk; A, arm; L, leg.
† Estimation of area burned is based on Berkow, S. G.: Am. J. Surg. 11:315 (Feb.) 1931.

In all other cases, the end-results were satisfactory. No contraction scars remained; the course of the patient was relatively fever free, and an early ambulatory condition resulted. In some cases, infection appeared beneath the antiseptic dressing, manifested by softening, so that further applications of gentian violet were required. After several such experiences, in some of which many applications of the dye were necessary, we decided to incorporate the dye into a jelly-like base. We therefore added 30 Gm. of tragacanth to 1,000 cc. of a 1 per cent aqueous solution of gentian violet. We placed a thick layer of this jelly on four or five sheets of gauze and applied the dressing to the burned area. Repeated applications were not necessary except in severe cases. A thin, moist, sterile protective layer was formed over the burned area, and rapid healing resulted.

The results that we obtained from the latter treatment were far superior to those obtained from the use of the aqueous solution.

Our series of cases is small. However, since in no case treated with gentian violet jelly did the fever rise to over 99.8 F., nor was any evidence of toxemia present, and since the end-results of the treatment were satisfactory, we have thought it important to make this preliminary report, which will be followed by a detailed report of the treated cases.

### CONCLUSIONS

1. Treatment of burns with gentian violet, as first suggested by Aldrich, gives excellent end-results.

2. From our experience, we believe that gentian violet jelly is superior to the aqueous solution of the dye.

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# RHEUMATOID ARTHRITIS

## A NEW METHOD OF APPROACH TO THE DISEASE

RUSSELL L. CECIL, M.D.
NEW YORK

Chronic arthritis is one of the great medical problems of civilization, certainly of civilization in the temperate zones. One might almost say that every age group has its arthritic problem. For example:

Ages 2 to 5 years, Still's disease.
Ages 5 to 20 years, rheumatic fever.
Ages 20 to 50 years, rheumatoid arthritis.
Ages 50 to 70 years, osteo-arthritis.

There is some overlapping, of course, between the groups, but the highest incidence of these four forms of arthritis is observed respectively within the years noted.

In the present paper I discuss certain recent developments in the field of arthritis and show how this newer knowledge can be applied in the diagnosis, prognosis and treatment of joint disease in general and of rheumatoid arthritis in particular.

### OLDER CONCEPTIONS OF ARTHRITIS

Osler,[1] in the first edition of his textbook, drew an excellent picture of chronic arthritis as it was looked on forty years ago. The form of chronic arthritis now described as osteo-arthritis is referred to by Osler as "chronic rheumatism"; the form now known as rheumatoid arthritis is called "arthritis deformans." The distinction between the two types, however, is not sharply drawn, especially as regards pathology. At that time Osler followed the teachings of J. K. Mitchell [2] in looking on rheumatoid arthritis as a disease of neurotrophic origin and cited, in support of this view, such facts as its association with nervous shock, its similarity to the neurogenic arthropathies, its symmetrical distribution and its remarkable trophic changes. In the paragraph on etiology there is no reference to such factors as focal infection, intestinal intoxication or dietary deficiency. Allergy was still a closed door.

### RECENT ADVANCES

Needless to say, much progress has been made in our knowledge of arthritis since 1892. The more important milestones that mark this progress are:

1. Recognition of the two great types of chronic joint disease now usually referred to as rheumatoid arthritis

Read before the Mid-South Post Graduate Medical Association at Memphis, Tenn., Feb. 14, 1933.
From New York Hospital and Department of Medicine, Cornell University Medical College, and the Second Medical (Cornell) Division of Bellevue Hospital.

1. Osler, William: The Principles and Practice of Medicine, New York, D. Appleton & Co., 1892, p. 278.
2. Mitchell, J. K.: quoted by Osler: The Principles and Practice of Medicine, 1892, p. 283.

and osteo-arthritis, respectively (Garrod,[3] 1890; Nichols and Richardson,[4] 1909).

2. The theory of focal infection, first propounded in America by Frank Billings.[5]

3. The modern bacteriology and serology of arthritis.

4. Investigations into the carbohydrate metabolism in chronic arthritis[6] and the more recent studies on vitamins in relation to arthritis.[7]

5. New methods in the application of physical therapy, hydrotherapy and climatology.

6. Advances in the surgical and orthopedic treatment of chronic arthritis.

## MODERN CLASSIFICATION OF ARTHRITIS

The various classifications of chronic arthritis have always been unsatisfactory because they do not rest on an etiologic basis. Years ago, pathologists pointed out definite anatomic features that differentiated the two great types of joint disease. More recently, radiologists and clinicians have learned to make a distinction between these two types. At a recent meeting in New York of the directors of arthritis clinics, the classification given in table 1 was agreed on.

The unanimous acceptance of this classification by a group of men especially interested in arthritis is significant of the modern trend of thought along these lines. The inclusion of rheumatoid arthritis in the infectious group is particularly important.

TABLE 1.—*Classification of Arthritis*

| | |
|---|---|
| I. Infectious | a. Rheumatic fever<br>b. Rheumatoid arthritis<br>c. Arthritis caused by specific organism |
| II. Degenerative | Osteo-arthritis (hypertrophic arthritis) |
| III. Allergic | Serum sickness |
| IV. Traumatic | |
| V. Metabolic | a. Gout<br>b. Scurvy<br>c. Rickets |
| VI. Neurogenic arthropathy | Including syringomyelitic, Charcot's, posthemiplegic, etc. |

It is now common knowledge that rheumatoid arthritis is primarily a disease of the synovial membrane and other soft parts of the joint, while osteo-arthritis is a disorder of the articular cartilage and adjacent bone. Confusion still arises in some cases, as the cartilage and bone may become involved in the later stages of rheumatoid arthritis, while osteo-arthritis may be complicated occasionally by hydrops or by thickening of the synovial membrane. In general, however, rheumatoid arthritis involves the soft tissues, osteo-arthritis the hard tissues of the joint.

Allison and Ghormley[8] have shown definitely that rheumatoid arthritis has a specific micropathology. In addition to the chronic granulation tissue which occurs in the synovial membrane and which in itself is rather characteristic, there is a more specific lesion consisting of peculiar clumps of lymphoid cells, which are not encountered in other forms of chronic arthritis. The microscopic changes in the subcutaneous nodule are also highly characteristic, presenting a cellular picture not seen anywhere else.

Osteo-arthritis also has its own morbid anatomy. The fibrillation and thinning of the cartilage, the condensation and eburnation of the bone, are easily recognized in the gross as well as microscopically.

The anatomic differences between rheumatoid arthritis and osteo-arthritis are well brought out by radiography. In the former there is a haziness of the interarticular space and rarefaction of the bone. In the later stages the destruction of cartilage leads to close apposition and possible fusion of the articular surfaces. In osteo-arthritis, bony spiculation and hypertrophy of the articular margins is visible even in the early stages. Later on there is increased osseous overgrowth at the joint margins, accompanied by degeneration and thinning of the cartilage. In osteo-arthritis, fusion of the articular surfaces does not occur.

These fundamental differences between rheumatoid arthritis and osteo-arthritis suggest that they are independent disease entities of different etiology, and such indeed appears to be the case. The etiology of rheumatoid arthritis is still under debate, but certainly the pathologic changes just described are strongly indicative of a chronic infection. Rheumatoid arthritis is an *inflammatory* disease and physicians long ago learned to look on chronic inflammatory tissue and granulation tissue as expressions of chronic infection. The granulomatous tissue found in the joints of rheumatoid patients is similar in many respects to the inflammatory tissue of tuberculosis and syphilis. Furthermore, the clinical course of rheumatoid arthritis is that of an infectious process. The symptoms are sometimes so acute, particularly in the early stages, that the infectious origin of the disease seems almost undeniable. The migratory pain, swelling and heat in the joints may be quite suggestive of rheumatic fever. The leukocytosis and increase of immature cells in the blood are also indicative of infection. The complications, particularly iritis and subcutaneous nodules, point toward an infectious process. The interesting studies of Klinge[9] suggest that allergy plays some part in the pathogenesis of rheumatoid arthritis, but if so, it must be a bacterial allergy. There is no evidence of an allergy to food, pollen or animal emanations.

Hypertrophic or osteo-arthritis appears to be a phase of senescence. While any irritant, if continued long enough, will produce hypertrophic changes in the bony margins of a joint, the fact remains that osteo-arthritis, as it appears in middle age, presents the picture of a *degenerative* process akin to arteriosclerosis or gray hair. It is possible, of course, that certain toxic or metabolic factors accelerate the process, but the picture is not that of an infection.

## FOCAL INFECTION

The theory of focal infection was originally presented as a contribution to the etiology of rheumatoid arthritis. It is true that many people have foci of infection yet never develop arthritis. Some other factor enters in, possibly a temporary lowering of resistance or some crisis in bacterial allergy. Rheumatoid arthritis has

3. Garrod, A. E.: Treatise on Rheumatism and Rheumatoid Arthritis, 1890.

4. Nichols, E. H., and Richardson, F. L.: Arthritis Deformans, J. M. Research **21:** 149 (Sept.) 1909.

5. Billings, Frank: Chronic Focal Infections and Their Etiologic Relations to Arthritis and Nephritis, Arch. Int. Med. **9:** 484 (April) 1912.

6. Pemberton, Ralph, and Foster, G. L.: Studies on Arthritis in the Army, Based on Four Hundred Cases, Arch. Int. Med. **25:** 231 (March) 1920. Pemberton, Ralph, and Peirce, E. G.: Relation of the Intestinal Tract and Diet in the Treatment of Arthritis, Ann. Int. Med. **5:** 1221 (April) 1932.

7. Fletcher, A. A.: Chronic Arthritis, Canad. M. A. J. **12:** 633 (Sept.) 1922. Fletcher, A. A., and Graham, Duncan: The Large Bowel in Chronic Arthritis, Am. J. M. Sc. **179:** 91 (Jan.) 1930. Fletcher, A. A.: The Nutritional Factor in Chronic Arthritis, J. Lab. & Clin. Med. **15:** 1140 (Aug.) 1930.

8. Allison, Nathaniel, and Ghormley, R. K.: Diagnosis in Joint Disease, New York, William Wood & Co., 1931, p. 139.

9. Klinge, F.: Die Eiweissuberempfindlichkeit-Gewebsanaphylaxie der Gelenke: Experimentelle pathologisch-anatomische Studie zur Pathogenese des Gelenkrheumatismus, Beitr. z. path. Anat. u. z. allg. Path. **83:** 185-216, 1929-1930.

its perfect analogue in gonococcal arthritis, a well known infection characterized by a primary focus of infection in the genito-urinary tract with metastatic infection in the joints. In these two diseases the focus and the infectious agent are different, the mechanism of infection the same. Rheumatoid arthritis and gonococcal arthritis sometimes present a strikingly similar clinical picture, so similar, in fact, as to be indistinguishable except by bacteriologic and serologic study.

## BACTERIOLOGY OF ARTHRITIS

The theory of focal infection focused the attention of investigators on the bacteriology of rheumatoid arthritis, but efforts to isolate an exciting agent have been for the most part unsatisfactory. The streptococcus is the micro-organism most frequently recovered, both from the foci and from the joints, but the percentage of positive results has always been small. Twenty years ago, Davis [10] pointed out the high incidence of hemolytic streptococci in the tonsils of patients with rheumatoid arthritis and produced experimental arthritis in rabbits with these strains. Rosenow [11] recovered streptococci from the enlarged lymph nodes of patients with arthritis and, from time to time since then, various observers [12] have succeeded in cultivating streptococci from both the blood stream and the joints in a small percentage of patients with this disease.

In 1929, and again in 1931, I undertook a detailed study of the bacteriology of the blood and joints in arthritic patients in collaboration with Nicholls and Stainsby.[13] A special technic was employed, the chief features of which were the use of the blood clot only for blood cultures, and incubation of blood and joint cultures for from three to four weeks before discarding them as sterile. In a series of 154 cases of rheumatoid arthritis, streptococci were recovered from the blood in 96, or 62.3 per cent; while in 49 cases in which joint cultures were taken, 35, or 67.3 per cent, yielded streptococci. Most of the strains recovered in this series were attenuated hemolytic streptococci. This study awakened considerable interest in the bacteriology of rheumatoid arthritis and a number of studies along this line have since appeared in the literature, some confirming and others failing to confirm these observations. In table 2 I have summarized the results of various investigators whose articles have appeared since our own work was published. In most of these reports the technic used for blood and joint cultures has been identical or almost identical with that employed in our original investigations. In table 3 a similar outline has been given of the results obtained by ourselves and other investigators in joint cultures. It is significant that those who obtained positive results with blood cultures were also successful with joint cultures, while those who obtained negative blood cultures also had negative results in the joints. The reader will at once be struck with the disparity in the results obtained by presumably competent bacteriologists in different laboratories. These discordant observations may be due to slight modifications in culture mediums as employed in various laboratories. Even when the same ingredients have been used, slight differences in peptone, beef or water, and differences in methods of titration might account for the success of some laboratories and the failure of others in recovering streptococci from the blood and joints of these patients.

Dawson, Olmstead and Boots [14] imply that the technic employed by Cecil, Nicholls and Stainsby [13] in their blood cultures was so involved as to call into serious question the significance of all bacterial growth encountered in the cultures, but certainly this criticism could not be used against the joint cultures, which were carried out in the simplest possible manner. It should also be noted that though Dawson, Olmstead and Boots recovered a few green streptococci in their blood cultures from both arthritics and controls, they never succeeded in recovering hemolytic streptococci similar to the "typical strains" of Cecil, Nicholls and Stainsby. The assumption that the streptococci which have been

TABLE 2.—*Blood Cultures in Rheumatoid Arthritis*

| Authors | Number of Cases | Positive for Streptococcus |
|---|---|---|
| **POSITIVE RESULTS** | | |
| Cecil, Nicholls and Stainsby: Arch. Int. Med. **43:** 571 (May) 1929; Am. J. M. Sc. **181:** 12 (Jan.) 1931 | 154 | 96 (62.3%) |
| Margolis and Dorsey: J. Infect. Dis. **46:** 442 (June) 1930 | 89 | 9 (10.1%) |
| Kracke and Teasley: J. Lab. & Clin. Med. **16:** 169 (Nov.) 1930 | 120 | 13 (10.8%) |
| Klugh, F. G.: South. M. J. **24:** 1 (Aug.) 1931 | 74 | 53 (71.6%) |
| Gray, Fendrick and Gowen: Texas State J. Med. **28:** 317 (Sept.) 1932 | 144 | 85 (59.0%) |
| Wetherby and Clawson: Arch. Int. Med. **49:** 303 (Feb.) 1932 | 50 | 25 (50.0%) |
| Strauss, Aubrey: Virginia M. Monthly **58:** 801 (March) 1932 | 31 | 2 ( 6.4%) |
| Ashworth, O. O.: Virginia M. Monthly **59:** 452 (Nov.) 1932 | 74 | 31 (41.9%) |
| Total | 736 | 314 (42.7%) |
| **NEGATIVE RESULTS** | | |
| Nye and Waxelbaum: J. Exper. Med. **52:** 885 (Dec.) 1930 | 21 | 1 ( 4.7%) |
| Bernhardt and Hench: J. Infect. Dis. **49:** 489 (Dec.) 1931 | 20 | 0 |
| Dawson, Olmstead and Boots: Arch. Int. Med. **49:** 173 (Feb.) 1932 | 80 | 3 ( 3.7%) |

TABLE 3.—*Joint Cultures in Rheumatoid Arthritis*

| Authors | Number of Cases | Positive for Streptococcus |
|---|---|---|
| **POSITIVE RESULTS** | | |
| Forkner, Shands and Poston: Arch. Int. Med. **42:** 675 (Nov.) 1928 | 63 | 11 (17.4%) |
| Cecil, Nicholls and Stainsby: Arch. Int. Med. **43:** 571 (May) 1929; Am. J. M. Sc. **181:** 12 (Jan.) 1931 | 49 | 33 (67.3%) |
| Margolis and Dorsey: J. Infect. Dis. **46:** 442 (June) 1930 | 25 | 4 (16.0%) |
| Gray, Fendrick and Gowen: Texas State J. Med. **28:** 317 (Sept.) 1932 | 16 | 6 (37.5%) |
| Strauss, Aubrey: Virginia M. Monthly **58:** 801 (March) 1932 | 10 | 1 (10.0%) |
| Total | 163 | 55 (33.7%) |
| **NEGATIVE RESULTS** | | |
| Nye and Waxelbaum: J. Exper. Med. **52:** 885 (Dec.) 1930 | 5 | 0 |
| Dawson, Olmstead and Boots: Arch. Int. Med. **49:** 173 (Feb.) 1932 | 19 | 0 |

10. Davis, D. J.: Bacteriological and Experimental Observations on Focal Infections, Arch. Int. Med. **9:** 505 (April) 1912; Chronic Streptococcus Arthritis, J. A. M. A. **61:** 724 (Sept. 6) 1913.

11. Rosenow, E. C.: The Etiology of Arthritis Deformans, J. A. M. A. **62:** 1146 (April 11) 1914.

12. Moon, V. H., and Edwards, S. H.: Results of Blood Cultures in Rheumatoid Arthritis, J. Infect. Dis. **21:** 154 (Aug.) 1917. Richards, J. H.: Bacteriologic Studies in Chronic Arthritis and Chorea, J. Bacteriol. **5:** 511 (Sept.) 1920. Hadjopoulos, L. G., and Burbank, Reginald: A Preliminary Study Bearing on the Specific Causative Factors of Multiple Infective Arthritis, J. Bone & Joint Surg. **9:** 278 (April) 1927.

13. Cecil, R. L.; Nicholls, E. E., and Stainsby, W. J.: The Bacteriology of the Blood and Joints in Chronic Infectious Arthritis, Arch. Int. Med. **43:** 571 (May) 1929; The Etiology of Rheumatoid Arthritis, Am. J. M. Sc. **181:** 12 (Jan.) 1931.

14. Dawson, M. H.; Olmstead, Miriam, and Boots, R. H.: Bacteriologic Investigations on the Blood, Synovial Fluid and Subcutaneous Nodules in Rheumatoid (Chronic Infectious) Arthritis, Arch. Int. Med. **49:** 173 (Feb.) 1932.

recovered from the blood and joints in rheumatoid arthritis are contaminations from the air or skin is not valid for several reasons: (1) Streptococci, especially those of the hemolytic type, are rarely encountered as contaminations in bacteriologic work; (2) if these streptococci were contaminations, they should have occurred just as frequently in controls as in arthritic patients, which was not the case; (3) if these streptococci were contaminations, one would not expect small doses to produce an arthritis in rabbits; (4) the serum of most patients with rheumatoid arthritis contains specific agglutinins for the hemolytic streptococcus. Why assume that the hemolytic streptococci in our blood cultures were contaminations, when the patient's own serum contains specific streptococcic agglutinins for the organism isolated?

I might close this discussion of the bacteriology of arthritis by quoting the comments of Carey Coombs [15] in his review of the bacteriology of rheumatic fever. After reporting his own success in the cultivation of streptococci from various cases of rheumatic fever, he remarks: "We may perhaps sympathize with those whose [bacteriologic] results have been uniformly negative . . . but it is one of those controversies in which a few positive facts may be held to outweigh a number of purely negative ones."

Cecil, Nicholls and Stainsby found that, when rabbits were injected intravenously with small doses of the attenuated hemolytic streptococci which had been recovered from rheumatoid patients, they usually developed arthritis in one or more joints. It was interesting to note a tendency in the streptococci to affect the metacarpophalangeal and interphalangeal joints of the rabbit, thus producing a striking resemblance to the fusiform fingers of the human patient with rheumatoid arthritis. In those rabbits that survived several months of experimental arthritis, the lesions took on a chronic form with beginning ankylosis and deformity, and microscopic sections of the synovial membrane revealed a chronic granulomatous tissue indistinguishable from that of the human rheumatoid joint.

### STREPTOCOCCIC AGGLUTININS IN RHEUMATOID ARTHRITIS

One of the most interesting facts in relation to the serology of rheumatoid arthritis is the presence of specific streptococcic agglutinins in the serums of patients with this disease. The presence of these agglutinins was first described by Cecil, Nicholls and Stainsby [13] in 1931, who showed that most of their "typical strains" of attenuated hemolytic streptococci were agglutinable by rheumatoid serum. In a series of 103 cases of rheumatoid arthritis, 97 showed agglutination with the "typical strain" of streptococcus at a dilution of 1:640 or higher, while in a series of 50 normal controls the serum in every case failed to give a strong agglutination reaction. Of 102 pathologic controls, only 2 patients gave a positive reading at a dilution of 1:640 or higher. In a later report on streptococcic agglutinins in rheumatoid arthritis, Nicholls and Stainsby [16] noted that hemolytic streptococci from other sources, such as scarlet fever and erysipelas, were often agglutinable by arthritic serum, but not to such a high degree as the organism recovered from rheumatoid patients. Dawson, Olmstead and Boots [17] confirmed the presence of these agglutinins in the serums of patients with rheumatoid arthritis, obtaining positive reactions in 67 per cent of 157 typical cases. They further noted that the reaction still occurred after the streptococci had been killed by heating them from one to two hours at 55 C., and this observation we have recently corroborated in our own laboratory. The capacity of rheumatoid serum to agglutinate killed streptococci would appear to eliminate this reaction from the group of nonspecific streptococcic agglutinins recently described by Tillett and Abernathy [18] in various infectious diseases.

It is quite significant that Dawson, Olmstead and Boots were able to corroborate the presence of these specific agglutinins for hemolytic streptococci in the serum of rheumatoid patients, though they were unable to recover hemolytic streptococci, such as those described by us, in the blood and joints of rheumatoid patients. The presence of these agglutinins in the serum of patients with rheumatoid arthritis has also been confirmed by Gray, Fendrick and Gowen,[19] by Clawson and his co-workers,[20] and by Keefer, Myers and Oppel.[20a]

It seems fair to conclude from these various investigations that the streptococcic agglutinins present in the serum of patients with rheumatoid arthritis are specific agglutinins differing in no essential respect from the specific agglutinins that occur in infections with the typhoid bacillus, the pneumococcus and other pathogenic micro-organisms.

### THE SEDIMENTATION RATE IN RHEUMATOID ARTHRITIS

During the past few years a number of papers have appeared on the sedimentation rate in chronic arthritis. The consensus seems to be that the sedimentation rate of the red cells can be used as a method of differentiating the various forms of infection of the joint from the purely degenerative or traumatic processes. Race,[21] for example, found the sedimentation rate greatly accelerated in rheumatoid arthritis, whereas in osteo-arthritis it was usually normal or nearly so. Dawson, Sia and Boots [22] made use of the sedimentation rate as a method of differentiating rheumatoid arthritis from osteo-arthritis. They found that in rheumatoid arthritis it was often greatly increased, usually attaining values exceeding 30 mm. in one hour, whereas in osteo-arthritis the rate was usually normal or only slightly elevated, rarely attaining a value greater than 30 mm. Kahlmeter [23] found the sedimentation rate a useful guide in the differential diagnosis of chronic arthritis, with rates reaching from 40 to 60 mm. in infectious arthritis, but rarely increased in osteo-arthritis and mon-

15. Coombs, Carey: Rheumatic Heart Disease, New York, William Wood & Co., 1924, p. 12.

16. Nicholls, E. E., and Stainsby, W. J.: Streptococcal Agglutinins in Chronic Infectious Arthritis, J. Clin. Investigation **10:** 323 (June) 1931.

17. Dawson, M. H.; Olmstead, Miriam, and Boots, R. H.: Agglutination Reactions in Rheumatoid Arthritis, J. Immunol. **23:** 187 (Sept.) 1932.

18. Tillett, W. S., and Abernathy, T. J.: Serological Reactions with Hemolytic Streptococci in Acute Bacterial Infections, Bull. Johns Hopkins Hosp. **50:** 270 (April) 1932.

19. Gray, J. W.; Fendrick, Edward, and Gowen, C. H.: Rheumatic Fever and Rheumatoid Arthritis from the Laboratory Point of View, Texas State J. Med. **28:** 317 (Sept.) 1932.

20. Clawson, B. J.; Wetherby, Macnider; Hilbert, E. H., and Hilleboe, H. E.: Streptococcic Agglutination in Chronic Arthritis and Acute Rheumatic Fever, Am. J. M. Sc. **184:** 758 (Dec.) 1932.

20a. Keefer, C. S.; Myers, W. K., and Oppel, T. W.: Streptococcal Agglutinins in Patients with Rheumatoid (Atrophic) Arthritis and Acute Rheumatic Fever, J. Clin. Investigation **12:** 267 (March) 1933.

21. Race, Joseph: The Suspension Stability Test in Rheumatoid Diseases, Proc. Roy. Soc. Med. **22:** 15 (March) 1929.

22. Dawson, M. H.; Sia, R. H. P., and Boots, R. H.: The Sedimentation Rate of the Erythrocytes in Chronic Arthritis, Proc. Soc. Exper. Biol. & Med. **27:** 657 (April) 1930.

23. Kahlmeter, G.: The Significance of Serologic and Blood Examinations in Rheumatic Disease, Acta rheumatol. **1:** 33 (Oct.) 1931.

articular rheumatism. Forestier,[24] in a recently published report, summarizes his experiences with the sedimentation rate in the differential diagnosis of arthritis. In fifty-seven cases of polyarthritis of the inflammatory type, not a single one had a normal rate. Several cases of from ten to fifteen years' duration attained a sedimentation rate of from 80 to 100 mm. In fifty-five cases of osteo-arthritis, 62 per cent showed a normal sedimentation rate. In 30 per cent the rate was very slightly elevated, and there was only one with a rate above 20 mm. This writer concludes that though the sedimentation rate is a nonspecific reaction, it can render definite diagnostic service in the differentiation of the two great types of chronic arthritis. In the Cornell Clinic and in my own laboratory, the method of Rourke and Ernstene [25] has been employed. By this method, blood is heparinized and a correction made for the red cell volume. The "corrected sedimentation index" is a reliable index of the severity of infection and tissue damage in the body. The normal limits of the corrected sedimentation index are from 0.08 to 0.4. In my records, a series of fifty-two cases of rheumatoid arthritis have shown an average sedimentation index of 1.1, while in a series of thirty-one cases of osteo-arthritis the average index was only 0.46. In other words, the average index for the rheumatoid cases was almost three times the upper limit of normal, whereas the average index for the osteo-arthritic patients was only slightly above normal. The highest index in the rheumatoid series was 2.1. The highest in the hypertrophic series was 0.9. The rheumatoid patients that gave a low reading either were in an early stage with little or no swelling or were well on the road to recovery.

In conclusion, then, it may be said that the sedimentation test is of distinct value in separating arthritis of the infectious type from degenerative changes in the joint on the one hand, and from traumatic or postural disturbances on the other. Any case presenting joint symptoms, with a sedimentation index above 1, can usually be considered an infectious arthritis, provided other forms of infection have been eliminated.

### THE SCHILLING HEMOGRAM

The Schilling hemogram is perhaps the most definite of all gages of the activity of an infectious process. The striking increase of immature polymorphonuclear-cytes (shift to the left) in the circulating blood results from stimulation of the bone marrow, and this stimulation is most conspicuous in acute and chronic infections. Indeed, there are very few conditions other than infection that will induce this reaction. Reznikoff [26] mentions hemorrhage, malignant metastases to bone marrow, and extensive destruction of tissue as conditions other than infection which may produce a "shift to the left." If a shift to the left were demonstrable in most cases of rheumatoid arthritis, it would be another bit of presumptive evidence in favor of its infectious origin. Further, it would be, like the sedimentation rate, of practical value in the differentiation of infectious from noninfectious arthritis. What are the actual facts? Unfortunately, very little has appeared in the literature so far on the subject. Gerard and Boerner [27] have reported two cases of chronic arthritis showing a shift to the left, one a case of "multiple arthritis" with a moderate increase of immature cells, and the other with a slight nuclear shift. Piney [28] reports a case of septic arthritis of the knee with a marked shift to the left. Eaton [29] has recently reported an investigation of the blood cell count in 250 patients with chronic arthritis. In this series, 80 per cent showed either a moderate or a marked shift to the left. Unfortunately the author makes no distinction between rheumatoid and hypertrophic arthritis, so no accurate deductions can be made from his figures.

In some unpublished figures which he has kindly allowed me to use, Dr. Paul Reznikoff [30] has found a definite shift to the left in nineteen of twenty-eight cases of rheumatoid arthritis (67.8 per cent). In some of these cases the percentage of immature cells was three or four times the normal.[31]

In a recent series of arthritic patients that I studied in private practice, Schilling counts were made on twenty-three patients with typical rheumatoid arthritis and on twenty-one with osteo-arthritis. In the former group, twelve, or 52 per cent, showed a definite increase of immature cells in the blood. The elimination of several mild cases would have caused the percentage to be considerably higher. In twenty-one patients with osteo-arthritis there were only two, or 9.5 per cent, who showed any increase in the percentage of immature cells, and in both of these instances the increase was only slightly above normal; namely, 12 and 14 per cent, respectively. In ten controls who had no arthritis, none showed an increase in immature forms.

From this brief review, it is evident that the Schilling count may prove to be of considerable value in the differential diagnosis of chronic arthritis, particularly when taken in conjunction with the sedimentation rate and the agglutination reaction.

### LABORATORY METHODS IN DIAGNOSIS

From what has been said, it is clear that the modern clinical laboratory can be of great assistance in the differential diagnosis of arthritis. What are the laboratory procedures that can be employed?

1. Excision of tissue from the affected joint. Allison and Ghormley [8] suggest this as a routine procedure. The synovial membrane in rheumatoid arthritis shows a characteristic pathologic condition, and the same is true of tuberculous and syphilitic joints. Excision of tissue from a joint, however, is a rather complicated procedure.

2. Blood and joint cultures. These may yield valuable information, but the blood cultures require an elaborate technic and considerable time, experience and skill on the part of the bacteriologist.

3. Roentgen examination. The roentgenogram is of considerable help in differentiating infectious from

24. Forestier, Jacques: L'épreuve de la sédimentation des hématies par la méthode de Westergren, Monde méd. **41**: 708 (July 15) 1931.
25. Rourke, M. Dorothy, and Ernstene, A. C.: A Method for Correcting the Erythrocyte Sedimentation Rate for Variations in the Cell Volume Percentage of Blood, J. Clin. Investigation **8**: 545 (June 20) 1930.
26. Reznikoff, Paul: Immature White Blood Cell Counts in Infectious Diseases, J. A. M. A. **93**: 963 (Sept. 28) 1929.
27. Gerard, J. H., and Boerner, F.: The Significance of "Shift to the Left" in Differential Leukocyte Counts and the Nuclear Index as a Means for Interpreting and Recording, J. Lab. & Clin. Med. **16**: 225 (Dec.) 1930.
28. Piney, Alfred: Recent Advances in Haematology, Philadelphia, P. Blakiston's Son & Co., 1931, p. 241.
29. Eaton, E. R.: Chronic Arthritis: A Report Based on the Study of the Blood-Cell Count in 250 Cases, J. Am. Institute of Homeopathy **25**: 125 (Feb.) 1932.
30. Reznikoff, Paul: Personal communication to the author, November, 1932.
31. Since this article went to press, Steinbrocker and Hartung (The Filament-Nonfilament Count in Chronic Arthritis: An Aid in the Differentiation of Rheumatoid Arthritis and Osteo-Arthritis, J. A. M. A. **100**: 654 [March 4] 1933) have reported their results with the modified Schilling count in the differentiation of rheumatoid arthritis and osteo-arthritis. According to these authors, the immature cells were elevated in 100 per cent of patients with rheumatoid arthritis and in 48 per cent of patients with osteo-arthritis. Their method of counting, however, was somewhat different from that employed by the author of this paper.

degenerative and traumatic joint conditions, but it rarely tells the exact etiology of the condition.

4. The sedimentation rate and the Schilling leukocyte count. These are comparatively easy to do and may be of considerable value in indicating an active infection of the joint.

5. Agglutination reactions with Streptococcus hemolyticus. These are usually positive in rheumatoid arthritis and practically always negative in degenerative and traumatic cases. The Wassermann test and the gonococcus complement fixation test are valuable in eliminating specific forms of arthritis.

6. A uric acid determination on the blood. This may disclose gout.

It is evident that the modern approach to the diagnosis of rheumatoid arthritis has to do largely with bacteriologic and serologic methods. In this respect it resembles two other great infections, tuberculosis and syphilis. In tuberculosis, examination of the sputum and other body fluids, and tuberculin skin tests have come to be indispensable in the diagnosis of tuberculous disease. In syphilis, the identification of Spirochaeta pallida and the Wassermann reaction on the blood and spinal fluid are equally necessary. These three infections might well be looked on as "the great triad" of chronic infections of the temperate zones. It is significant that rheumatoid arthritis is the last of the three to be approached by scientific methods of diagnosis. It appears, however, from what has gone before, that we are now well on our way to this goal.

### PROGNOSIS

These newer blood tests can be used with great advantage in following the arthritic patient to determine from time to time the activity of his infection. Here again the situation is analogous to that of the two other great chronic infections, tuberculosis and syphilis. The tuberculous patient is followed with x-rays and with the sputum test for tubercle bacilli. The treatment of the syphilitic patient is checked from time to time with the Wassermann test. The patient with rheumatoid arthritis must be followed in the same way with agglutination and sedimentation tests and possibly with the Schilling count. Cecil, Nicholls and Stainsby[13] have stressed the fact that, as the rheumatoid patient improves, the amount of specific streptococcic agglutinins decreases in the blood; and, if recovery occurs, the agglutinins eventually disappear entirely. This point is again emphasized by Stainsby and Nicholls.[32] Forestier [24] and others have shown a similar tendency on the part of the sedimentation rate to return to normal as the rheumatoid patient improves. No doubt the same will be found to hold true as regards the Schilling count.

The three blood tests just described are all comparatively new and much more will be learned of their actual significance as time goes on. It is already evident, however, that they will play an important part in both the diagnosis and the treatment of rheumatoid arthritis.

### MODERN TREATMENT OF ARTHRITIS

The older school of clinicians had to resort to general systemic measures in the treatment of arthritis because their knowledge of the disease was so meager. Forty years ago, Osler [1] wrote with blunt frankness concerning the treatment of rheumatoid arthritis, saying: "Arthritis deformans is an incurable disease. . . . The best that can be hoped for is a gradual arrest." In order to maintain the general health, he advised plenty of good food, arsenic and iron tonics, and fresh air. Hydrotherapy and massage were also recommended.

Even the most skeptical must admit that we have come a long way in our treatment of arthritis since these words were written. Nothing about rest; nothing about focal infection; nothing about vaccines or vitamins; and almost nothing about physical therapy or heliotherapy.

Certain features of the old school method of treating arthritis deserve especial comment. All cases of chronic arthritis were treated in practically the same way. This was because there was little or no recognition of the different types. The diet featured low proteins. This idea orginated from the low protein diet for gout, which was often confused with arthritis. Salicylates were given to patients with rheumatoid arthritis as well as to patients with rheumatic fever, because the two diseases were often confused. It is now known that salicylates will not cure either rheumatoid or hypertrophic arthritis. They are employed merely to relieve pain. Spas were very popular with the old school, and great faith was placed in the curative value of various waters. The value of spas is still recognized but it is now believed that the benefit which patients receive comes from rest and recreation, to say nothing of copious water drinking and hot baths. Orthopedics played an important part in the treatment of arthritis because many patients reached the deforming and ankylosing stage of the disease, when orthopedic measures and appliances were absolutely necessary if they were to retain any function in their limbs. Orthopedics will always have an important rôle in diseases of the joints, but it is obvious that chronic arthritis is primarily a medical disease and that if physicians will learn how to treat it properly there will be less and less demand for orthopedic assistance.

The first point which I wish to stress in the modern treatment of arthritis is that treatment differs for the different types. There are certain measures, such as rest, heat and regulation of personal hygiene, that are indicated for all types of arthritis, but fundamentally the rational treatment of arthritis must be directed toward elimination of the cause, and as it is now generally recognized that chronic arthritis is a general term which covers conditions of various etiologies, each type of arthritis must be treated from this point of view. In the case of osteo-arthritis, the patient is usually overweight, and one of the most important problems will be the reduction of weight by a low calory diet. The basal metabolism in these patients is often below normal, and in such cases thyroid extract will be indicated. Osteo-arthritis usually affects the lumbar spine or the weight-bearing joints. Such being the case, a good deal of attention must be directed to the correction of posture and to other orthopedic measures. Physical therapy in all forms gives these patients much comfort. With the realization that trauma has an important etiologic bearing on hypertrophic arthritis, every effort must be made to eliminate joint strain or faulty body mechanics. Again, in osteo-arthritis the removal of focal infections should be undertaken only with the idea of protecting the patient's health and not with any hope of curing the degenerative process in the joint.

32. Stainsby, W. J., and Nicholls, E. E.: Further Studies on the Agglutination Reaction in Chronic Arthritis, J. Clin. Investigation, to be published.

There is no indication for vaccine therapy in hypertrophic arthritis. Arthroplastic operations on a joint affected by hypertrophic arthritis are rarely necessary, because the disease does not produce complete ankylosis.

The modern treatment of rheumatoid arthritis departs from the conventional or old-fashioned methods of treatment in a number of ways. The therapeutic point of view of the present-day practitioner is that which he would have toward any chronic infection. The keystone of the modern treatment of rheumatoid arthritis is the elimination of infected foci. This is certainly the feeling of most men who are studying this disease in arthritis clinics. It must be admitted that some of those who are interested in the problem feel that too much stress has been placed on the infectious side of rheumatoid arthritis and on focal infection therapy. They believe that focal infection has been overplayed and that more emphasis should now be put on other measures. There may be some basis for this point of view, but on the other hand there is never any reason for bashfulness about the truth. If it is true that rheumatoid arthritis is a chronic infection, I see no reason why one shouldn't stress that point; nor why, if focal infection is sound theory, one shouldn't stress focal infection also. I have always insisted that the elimination of infectious foci was the starting point in the treatment of rheumatoid disease, and I still have that feeling very strongly. The infectious theory of rheumatoid arthritis certainly has more weight than any other theory. There is little to support the idea that it is an endocrine disease or a deficiency disease or that it is due to disturbed metabolism, though some or all of these factors may be predisposing causes. Of course, the rheumatoid patient must be treated as a man who is constitutionally and chronically ill. He should be given rest, proper diet, fresh air, sunlight and vitamins; but it should not be forgotten that rheumatoid arthritis is fundamentally a chronic infection. One certainly doesn't doubt that tuberculosis and syphilis are infectious, though they are treated in many other ways than by vaccines and serums. All forms of therapy are abused at times. This applies to surgery, endocrine therapy and physical therapy; but one wouldn't banish these forms of treatment for that reason. Even though too many good teeth and tonsils may have been extracted, the principle of focal infection therapy *is* fundamentally sound and is of primary importance in the treatment of rheumatoid arthritis. The failure of all rheumatoid patients to improve after the removal of a focus is not a valid argument against this form of therapy. A focus of infection is like the gate to a garden. If the gate is left open and the chickens get in, a certain number of plants will be destroyed. If the chickens are promptly driven out, the injured plants will soon recover. If, on the other hand, the chickens are allowed to remain in the garden, the plants will be permanently injured. The chickens may be finally expelled, but it is then too late for the flowers to bloom again. The recuperative forces of nature can handle a limited amount of infection. They cannot handle an unlimited amount extending over several years.

*Rest.*—Swift [33] has stressed the importance of rest in the treatment of rheumatic fever, and certainly rest has come to be looked on as one of the most important factors in the treatment of rheumatoid arthritis. By rest I mean not only physical rest but rest from business, rest from the ordinary duties and vicissitudes of daily life. It is not saying too much to state that many rheumatoid patients, if taken early, could be cured by rest alone. It is strange how quickly patients accept the idea of a rest cure for tuberculosis yet hesitate to leave home and work for the cure of arthritis. The fear of death, of course, is lacking with the latter disease, but certainly the possibility of permanent crippling is almost as bad. Under rest must also be included freedom from emotional strain. The emotions have much to do with both the onset and recovery in rheumatoid arthritis, and the prognosis will depend in great measure on the capacity of the patient to maintain an emotional equilibrium.

*Diet.*—The reduction of carbohydrates in the diet of the arthritic patient was first advocated by Pemberton.[6] I believe this is good practice, particularly if the weight can be maintained in thin patients by the adequate substitution of proteins and fats. Recent investigations suggest that the rationale for carbohydrate reduction lies in the increased consumption of vitamins that goes with the increased intake of protein and fat.

*Vitamins.*—The investigations of Fletcher [7] indicate that many patients with chronic arthritis show an atony and dilatation of the colon, and that the administration of vitamin B to such patients will often bring about a return to normal in the contour of the bowel, and a corresponding improvement in the patient. Furthermore, vitamins A, B and C all appear to bear a relation to resistance to infection. For these reasons many practitioners are now giving vitamin A, B and C (and sometimes D) to all patients with rheumatoid arthritis. The effect of this treatment on the general health of the patient is often quite striking, even if the condition of the joints remains unaffected.

*Elimination.*—Elimination through the bowels, the bladder and the skin is always in order and is accomplished by emphasis on regular movements, copious drinking of water, and frequent sweats. The latter may be achieved by hot packs or by the electric light cabinet. Colonic irrigations should not be employed as a routine. If used at all, they should be limited to one a week.

*Physical Therapy.*—The chief function of physical therapy in the treatment of rheumatoid arthritis is to improve the circulation, which is proverbially poor in this disease. Heat in all its forms is valuable, and so are exercises and massage. At the present moment there is a wave of enthusiasm for hyperthermia, or artificial fever. My experience with this form of therapy has not been very extensive, but so far the results have been rather disappointing. In some cases, no benefit at all has been noted; in others, the good effect has been only temporary; in a few cases, the improvement appears to have been permanent.

*Climate.*—I believe in the beneficent quality of a dry hot climate for the patients with arthritis. Patients who fail to improve under the usual forms of treatment should seek Arizona or New Mexico. Unfortunately there are some stubborn cases that do not improve, even in this ideal environment. But many others will.

*Vaccines.*—What shall be said of vaccines? Some of the workers in the arthritis field seem to bear a grudge against vaccine therapy, a prejudice based on the undeniable fact that vaccines have been too loudly exploited in the treatment of arthritis. But as I have

33. Swift, H. F.: Rheumatic Fever, in Cecil's Text-Book of Medicine, Philadelphia, W. B. Saunders Company, 1930, p. 91.

already remarked in discussing focal infection, the abuse of a form of therapy is no reason for giving it up entirely—as has actually been done with vaccines in some clinics. When in 1929 my co-workers and I [13] succeeded in recovering hemolytic streptococci from the blood and joints of patients with rheumatoid arthritis, and later demonstrated the presence of specific agglutinins in the blood of these patients, vaccines from these "typical strains" of streptococcus were prepared, and during the intervening years they have been tried in a large group of rheumatoid cases. Both the subcutaneous and the intravenous methods have been employed. Undoubtedly a certain number of patients are benefited by both methods of injection; more perhaps by the intravenous than by the subcutaneous route. In my experience the results have been better with private patients than in dispensary practice. No doubt more favorable results would be obtained with vaccines if we had a clearer understanding of their modus operandi. At the present time, I usually try intravenous injections of streptococcus vaccine on a patient with rheumatoid arthritis for at least three or four months. If improvement occurs, the treatment is continued. If not, it is discontinued. In using this form of therapy I try to avoid reactions of all kinds.

*Drugs.*—Drugs can quickly be dismissed. Iron for the anemia, arsenic and strychnine for their tonic effects, the salicylates to ease the pain—that about covers it. Gold thiocyanate has been advocated abroad, but has been disappointing in my hands.

*Surgery.*—During the past three decades, orthopedic surgery has made great strides in correcting the deformities and ankyloses incident to arthritis. The operations known respectively as synovectomy, arthroplasty and arthrodesis all have an important place in modern joint surgery. Sympathectomy of the cervical or lumbar ganglions has been tried by Rowntree, Adson and Hench [34] but has been successful in only a comparatively few cases.

From this brief review of the modern therapy of rheumatoid arthritis it becomes evident that, in spite of advances which have been made in our understanding of the disease, we are still without a specific cure for it. Those who are working on the problem of rheumatoid arthritis may well be envious of their colleagues in the fields of tuberculosis and syphilis, two chronic infections which, when seen early, can be treated quite successfully along well established lines. But perhaps we are nearer to a solution of the arthritis problem than we realize. Certainly the increasing knowledge that is being gained concerning the nature and etiology of the disease will place investigators in a far better position to work out a rational and satisfactory therapy.

## SUMMARY

The modern method of approach to the problem of chronic arthritis is based on the following considerations:

1. The majority of cases of chronic arthritis fall into one or the other of two great groups. Rheumatoid arthritis is a clearly defined clinical entity which in most cases can be accurately differentiated from osteoarthritis and from the so-called specific forms of infectious arthritis. Rheumatoid arthritis has its own pathology and usually runs a characteristic clinical course. Hypertrophic arthritis, on the other hand, appears to be a degenerative, senescent process.

2. Evidence is rapidly accumulating that rheumatoid arthritis (like rheumatic fever) is a chronic infection. This evidence comes from pathologic, bacteriologic, serologic and clinical sources. Allergy probably exerts an influence on the disease, but no more than in other chronic infections.

3. In rheumatoid arthritis a primary focus of infection is the portal of entry for the exciting agent. In respect to its pathogenesis, I consider the disease analogous to gonococcal arthritis, which it often resembles closely. The foci and the infectious agents are different, the mechanism of infection the same.

4. By employing new bacteriologic methods, a number of investigators have succeeded in cultivating streptococci from the blood and joints of patients with rheumatoid arthritis. While these observations have not been confirmed in some laboratories, the presence of specific streptococcic agglutinins in the serum of rheumatoid patients would seem to refute the theory that these micro-organisms are contaminations. Furthermore, the ease with which an experimental arthritis can be produced in rabbits by intravenous injection of these streptococci lends strong support to the proposition that rheumatoid arthritis is a streptococcic infection.

5. The specific streptococcic agglutinins that are found in the serums of a high percentage of patients with rheumatoid arthritis are of considerable value in differentiating rheumatoid arthritis from other forms of chronic arthritis. The sedimentation rate is useful in separating rheumatoid arthritis and the other infectious forms from noninfectious ailments of the joints.

6. By making use of the agglutination and sedimentation tests and the Schilling count, the physician is now in a position not only to make a more accurate classification of arthritic patients but also, by repeating the tests from time to time, to gage the activity of the disease and the efficacy of treatment.

7. The rational treatment of rheumatoid arthritis embraces removal of foci of infection, emphasis on rest, and a general building-up program, consisting of carefully regulated diet, vitamins, iron and arsenic, and adequate elimination through the intestine, bladder and skin. Streptococcus vaccine, administered intravenously, is of considerable value in many cases, though its modus operandi is not yet understood. Physical therapy, if carefully supervised, is useful in stimulating the local and general circulation. In advanced cases, orthopedic surgery may solve an otherwise baffling problem.

33 East Sixty-First Street.

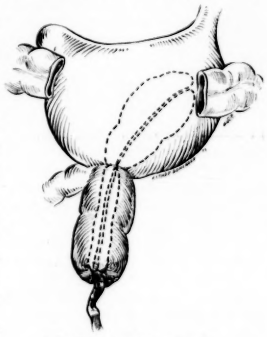
34. Rowntree, L. G.; Adson, A. W., and Hench, P. S.: Preliminary Results of Resection of Sympathetic Ganglia and Trunks in Seventeen Cases of Chronic "Infectious" Arthritis, Ann. Int. Med. **4**: 447 (Nov.) 1930.

**A Million Volt X-Ray.**—The most experienced workers with radium and moderate voltage x-ray regard these agents as equally effective under the same conditions. Even the most enthusiastic worker with radium has failed to show that this agent has produced any extraordinary therapeutic effects not shared by x-ray, except when it is possible to obtain an intense local action by insertion into the tissues. It is very doubtful that unusual curative possibilities lie in a million volt x-ray, for six million volt x-ray is available in radium. . . . The physicists, therefore, who have suggested that a million volt x-ray will do wonders in the curing of cancer had better return to their own problem of fracturing the atom. For the real question in the treatment of cancer today is the adjustment of the dosage administered to the biological rhythms in the cancer cell and the surrounding healthy tissues, and of all the variables entering into the practical problem, the wavelength of the radiation as determined by the voltage is probably the least important.—Editorial, *Am. J. Cancer* **17**:790 (March) 1933.

# RETROGRADE INTUSSUSCEPTION OF JEJUNUM: A COMPLICATION OF GASTRO-ENTEROSTOMY

RALPH BOERNE BETTMAN, M.D.
AND
ROBERT S. BALDWIN, M.D.
CHICAGO

Although gastro-enterostomy was first performed in 1881, it was not until 1917,[1] that is, thirty-seven years later, that the first case of retrograde intussusception of the jejunum was described as a complication of this operation. It probably was Baumann's[2] article in 1919 with its report of two occurrences in the same patient which really aroused interest in the matter, for within three years eight additional cases were reported. Henschen,[3] in 1927, before the fifty-first congress of German surgeons, presented a most complete summary of the knowledge to that time about ascending invaginations complicating stomach operations, and mentioned nearly every case that had previously been written up. Within the last few years many other instances have been reported until up to the present there are thirty-two cases on record, not counting the one we are about to report. The American literature has been particularly barren in this regard and contains only five case reports.[4] The only review of the literature in an American publication is White and Jankelson's,[4] in 1928. In view of the fact that their summary is incomplete and that five years has elapsed since its publication, we feel justified in submitting a report of our patient with a brief summary of the entire literature and a complete bibliography.[5]



Condition found at operation.

A man, aged 47, was admitted to our service, Feb. 18, 1931, in apparently very poor condition. His pulse was rapid and thready; his temperature was subnormal. He was not actually vomiting but was emitting a foul-smelling, dark brown fluid from his mouth. With a stomach tube, several quarts of a similar fluid were siphoned out of the stomach. Palpation of the abdomen after lavage was essentially negative except for a slight resistance and tenderness in the upper quadrant. There was no abdominal distention and no masses were felt. There was a scar of a former upper right rectus incision. He was put to bed and kept warm, and an intravenous saline injection was started while the operating room was being prepared.

Following a "stomach operation" (gastro-enterostomy) twelve years previously, the patient had been in excellent condition. Six days before admission to our service he had done a full day's work of heavy manual labor. At the end of the day he experienced a sharp pain in the upper part of the abdomen, which became very severe. He vomited and felt relieved, but within a few hours the pain returned with such severity that he was sent to a nearby hospital. Here he was observed and given a hypodermoclysis. He continued to vomit and by morning the vomitus contained bright red blood in large quantities. Later, the vomitus became feculent. Evidently under the impression that they were dealing with a bleeding gastric ulcer, his physicians continued expectant treatment until finally, after five days of continuous pain and vomiting, he was transferred to us. Under the preoperative diagnosis of a high intestinal obstruction, we performed a laparotomy. Great was our surprise to find that the pathologic condition consisted of a retrograde intussusception of 120 cm., starting in the efferent jejunal loop of the anastomosis about 30 cm. from the stomach and extending through the gastro-enterostomy into the stomach itself. The intussusception was readily disinvaginated, but the intestine was found to be gangrenous. A portion of the bowel was exteriorized, and a jejunostomy was done. The patient continued in poor condition and died two days later.

A review of the literature of retrograde jejunal intussusception following gastro-enterostomy shows that in the thirty-three cases reported, seventeen patients were women and thirteen were men. This is surprising, as the incidence of gastro-enterostomy operations is much greater in males than in females. Intussusception itself occurs more often in males than in females.

The average age was 43 years, the extremes being 21 years [1] and 75 years.[6]

The occurrence of this complication following the primary gastro-enterostomy varied in time from six days [7] to sixteen years.[8] The greatest number occurred after the first year and a half. Therefore, it must be considered a late complication of gastro-enterostomy.

The condition has been reported twenty-six times after posterior gastro-enterostomy and six times after anterior gastro-enterostomy. In ten cases an entero-enterostomy had been performed at the time of the gastro-enterostomy.

The size of the stoma has evidently nothing to do with its occurrence, since it has occurred in the presence of a small stoma as well as in the presence of a large one. In one case reported,[9] the condition recurred following an operation in which the stoma was reduced. The largest stoma reported [10] was 8 cm.; the narrowest, "two fingerbreadths."

The amount of intestine involved varied from 4 or 5 cm.[11] to 2 meters,[12] the average being 52 cm.

The base of the intussusception was at the gastro-enterostomy stoma in fourteen persons, at the site of the entero-enterostomy in one, and in the others below the gastro-enterostomy or entero-enterostomy stomas in distances varying from 3 to 50 cm.

Abdominal pain was the first and most striking symptom in all patients. In most instances, it was sudden, moderately severe, and colicky in type, although in many excruciating.

Vomiting occurred in every instance and was persistent. In eighteen instances the vomitus was bloody.

From the Surgical Services of Michael Reese and Cook County hospitals.

1. Steber: München. med. Wchnschr. **64:** 648 (May 15) 1917.
2. Baumann, E.: Arch. f. klin. Chir. **111:** 504 (Jan. 15) 1919.
3. Henschen, C.: Arch. f. klin. Chir. **148:** 730, 1927.
4. White, F. W., and Jankelson, I. R.: New England J. Med. **199:** 1189 (Dec. 13) 1928. Shearer, J. P., and Pickford, E. M.: Ann. Surg. **87:** 574 (April) 1928. Swartz, David: Canad. M. A. J. **20:** 172 (Feb.) 1929. Schilling, Nicholas: Ann. Surg. **95:** 958 (June) 1932.
5. Articles not referred to here may be found in the authors' reprints.
6. Angerer, Albin: Zentralbl. f. Chir. **59:** 1572 (June 25) 1932.
7. Vulleit, H.: Schweiz. med. Wchnschr. **54:** 669 (July 24) 1924.
8. Kopp, J. G.: Lyon chir. **22:** 664 (Sept.-Oct.) 1925.
9. Losert, Josef: Beitr. z. klin. Chir. **140:** 308 (Feb. 5) 1927. Buriánek, B.: Časop. lék. česk. **68:** 483 (April 5) 1929.
10. Shearer and Pickford.[4]
11. Pellegrini, A.: Arch. ed atti d. Soc. ital. di chir. **36:** 1081, 1930; abstr. Zentralorg. f. die ges. Chir. **52:** 135, 1931.
12. Drummond, H.: Brit. J. Surg. **11:** 79 (July) 1923.

It is important to note that the blood always made its appearance late and never in the early vomitus.

The condition of the patient, in almost all instances, on admission to the hospital was recorded as being "poor" or "in shock"; in two it was "fair," and in only one, "good."

A tumor mass in the upper part of the abdomen was palpated in eleven patients. In seven there was abdominal resistance to palpation, and in seven the abdomen was "soft and no masses" were felt.

The correct diagnosis was made before operation in only three instances.[13] In two[14] of these the patients themselves made the diagnosis because these were recurrences (the only recurrences in the series). In only one[6] did the physician assert that he made the diagnosis. Most of the patients were operated on, as was ours, under the all inclusive preoperative diagnosis of "high intestinal obstruction."

One patient[15] was subjected to roentgen study before operation but the results could not be interpreted until after the abdomen was opened.

In the majority of the cases reported, the indications for immediate operation were so apparent that laboratory tests which would delay operation did not seem justified. In only five cases was immediate operation postponed. In two of these, the erroneous diagnosis of a bleeding peptic ulcer was made (based on the bloody vomitus).

Operations were performed on twenty-eight patients with eight deaths and nineteen recoveries (in one report the result was not given). In the five patients who were not operated on, the condition was discovered at autopsy. It is interesting to note that in one patient[16] the intussuscepted intestine in the stomach was erroneously considered to be malignant tumor. The patient was treated conservatively and the true condition was not established until the postmortem examination.

The length of time from the onset of symptoms to the time of operation varied from five hours[17] to six or more days. Of the fifteen patients operated on within forty-eight hours after the onset, fourteen recovered and one died; this death occurred fourteen days after operation from bronchopneumonia. Of the ten patients operated on after two days, five died.

We have not included in this summary four instances of prolapse of the two jejunal loops through the gastro-enterostomy stoma because we do not consider such a condition retrograde intussusception, properly speaking. Vulleit,[7] Delfino,[18] Lewisohn,[19] and Bevan[20] have reported the cases.

SUMMARY

A case of retrograde intussusception of the jejunum into the stomach followed a gastro-enterostomy performed twelve years previously.

A review of the literature discloses thirty-two similar cases.

We believe that the condition is not as rare as one would suppose from the scarcity of these reports but that it has been frequently overlooked.

Early operation consisting of simple reduction of the intussusception is over 90 per cent successful.

104 South Michigan Avenue.

13. Baumann,[2] Buriánek,[9] Angerer.[6]
14. Baumann,[2] Buriánek.[9]
15. von Brunn, M.: Beitr. z. klin. Chir. **132**: 106, 1924.
16. Lundberg, S.: Acta chir. Scandinav. **54**: 423 (April) 1922.
17. Buriánek[9]
18. Delfino, E. A.: Deutsche Ztschr. f. Chir. **174**: 69, 1922.
19. Lewisohn, Richard: Ann. Surg. **76**: 543 (Oct.) 1922.
20. Bevan, A. D.: S. Clin. North America **8**: 469 (June) 1928.

# SYPHILITIC BURSOPATHY

## (LUETIC BURSOPATHY OF VERNEUIL)

M. J. MORRISSEY, M.D.
AND
H. S. REYNOLDS, M.D.
HARTFORD, CONN.

Verneuil, in 1868, first reported four cases of syphilitic bursopathy, which he described as "hydropisie des gaines tendineuses des extenseurs des doigts dans syphilis secondaire."

Fournier, Moreau, Chouet and Voisin followed in the recognition of syphilitic involvement of the bursae. In 1876, Keyes collected fourteen cases and, in 1884, Finger in an extensive article described this infection of the bursae. Büchler, in 1889, reported four cases, and Velpeau treated it with potassium iodide and mercury, not mentioning it as syphilis.

Dr. Halsted at Johns Hopkins reported one case and outlined the bursae involved in the order of frequency; namely, the prepatellar, the subpatellar, the semimembranous, that between the rectus and the crureus, the anserine bursa, that of the extensor digitorum communis, the bursae of the toes and the flexors of the fingers, and that at the radial border of the first phalanx of the forefinger.

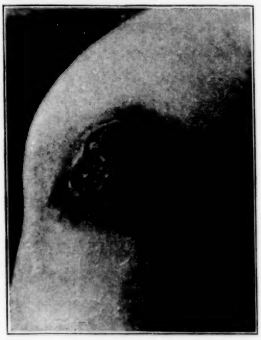


Fig. 1.—Ulceration on left knee.

Halsted's descriptive picture was that of an indolent disorder of the bursae involving most often the knees, particularly in women. The disease is quite independent of syphilitic arthritis, the bursae involved being most often those unconnected with the joints, and the neighboring joints themselves being entirely free from involvement with little or no pain or functional disability. He based his diagnosis on:

1. History of coexistent syphilis.
2. Spontaneous development of bursopathy with a particular traumatic history.
3. Slow evolution and chronic course.
4. Marked absence of pain and disability.
5. Symmetry of the bursopathy.
6. Site.
7. Absence of other causes.
8. Absence of joint involvement.
9. Inefficiency of nonspecific treatment.

Churchman, in 1909, reported a case and in a comprehensive review of the literature compiled twenty-six cases and gave this entity the name of luetic bursopathy of Verneuil. H. L. Barnard, R. W. Scott, W. P. Coues, W. Harttung, Herman Goodman and Howard Fox reported cases, bringing the total number to thirty-four.

In 1924, John E. Lane[1] of New Haven, Conn., reported and described two cases. During the same year Moreau stated in his thesis that (1) syphilis seems to be able to invade all the tissues and to invade them at all ages; (2) the subcutaneous bursae and those of the tendons present not only manifestations of secondary but also of tertiary syphilis.

Garner and Schoch[2] reported two cases, in October, 1931, bringing the total to thirty-eight.

### REPORT OF A CASE

Mrs. S. E. L., aged 68, was referred to us with a symmetrical swelling of the two knees, the left knee presenting a sluggish ulceration at the base of which was a grayish slough. At its upper border was a papillomatous growth, 2.5 cm. in diameter and raised about 1.5 cm. above the surface, involving the prepatellar area with a smaller satellite ulceration at its inferior border. This ulcer was distinctly the classic punched out lesion in appearance. Another rounded ulceration of the extensor surface of the right forearm at its upper third of 2 cm. in diameter was soft and boggy, containing a seropurulent substance. This gave no evidence of healing and later broke down, leaving a punched out ulceration. The duration of these ulcerations had been three months. The analysis of the

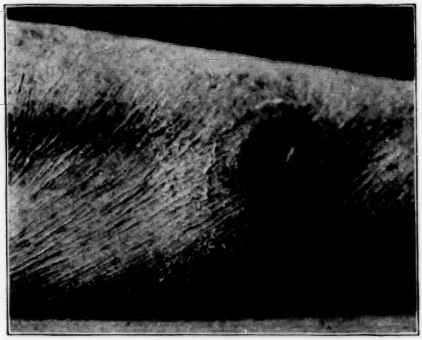


Fig. 2.—Ulceration on right forearm.

urine was negative but the Wassermann and Kahn tests of the blood were both four plus.

Examination of the spinal fluid was as follows: erythrocytes, 0; leukocytes, 0; globulin (Pandy), very slight increase; sugar, 58 mg. per hundred cubic centimeters; Kahn reaction, negative.

Pupillary reaction to light and in accommodation was sluggish. Deafness was marked. Nocturnal headache over a period of five years was reported. There was a history of previous lesions that did not ulcerate but subsided without any antisyphilitic medication. There was no history of arthritis. The patient had no children but she had had a miscarriage at the age of 24.

There was a definite and interesting history of traumatism of the knee, in that she had been in the habit of closing a door for years with her left knee.

### COMMENT

Since this case fulfils the requirements of Halsted's nine diagnostic points, we are offering it as another to the list of the luetic bursopathy of Verneuil.

The accompanying illustrations show clearly the lesions as described. Because of the paucity of reported cases of syphilitic bursopathy, only thirty-four cases being reported in the literature to date, and of the dearth of such lesions referred to in textbooks, it seemed that the report of another case is worthy of record.

18 Asylum Street.

1. Lane, J. E.: Syphilitic Bursitis, J. A. M. A. **82**: 852 (March 15) 1924.
2. Garner, V. C., and Schoch, A. G.: Syphilitic Bursopathy of Verneuil, Arch. Dermat. & Syph. **24**: 591 (Oct.) 1931.

## PERMANENT ENLARGEMENT OF THE LIPS AND FACE

### SECONDARY TO RECURRING SWELLINGS AND ASSOCIATED WITH FACIAL PARALYSIS: A CLINICAL ENTITY

GORDON B. NEW, M.D.
AND
WALTER A. KIRCH, M.D.
Fellow in Otolaryngology, the Mayo Foundation
ROCHESTER, MINN.

During the last twenty-two years, sixty-seven patients presenting chronic, noninflammatory, permanent enlargement of the lips and face have been observed in the Mayo Clinic. This condition has followed repeated swellings and has been associated with facial paralysis in thirteen cases. The condition comes on suddenly in a manner similar to angioneurotic edema, and then, with recurrence of attacks, increasing enlargement is a residue. The condition is apparently a clinical entity, but we have been able to find only slight mention of it in the literature. The results of treatment of the condition have been satisfactory.

### LITERATURE

The acute, circumscribed swelling described by Quincke[1] in 1882 corresponds with the onset of the condition, but Quincke did not mention the residual enlargement. In Quincke's edema, although the swelling has a preference for certain regions, such as the eyelids, cheeks, lips and hands, it does not always recur in the same area. Melkersson[2] reported a case of recurring facial paralysis associated with angioneurotic edema of the upper lip, with residual swelling of the lip. Rosenthal[3] described four patients who had bilateral facial palsy associated with acute, recurring edema of the face. Although he mentioned slight residual swelling in two cases, he thought it of little importance and did not suggest treatment.

### PRESENT INVESTIGATION

*History.*—The ages of the patients at the occurrence of the first swelling ranged from 4 to 54 years. Twenty-nine of the patients were less than 20 years of age, and fifty were less than 30 years of age. In more detail the incidence by decades of life was as follows: 1 to 10 years, three cases; 11 to 20 years, twenty-six cases; 21 to 30 years, twenty-one cases; 31 to 40 years, ten cases; 41 to 50 years, five cases, and 51 to 60 years, two cases. There were forty-six males and twenty-one females.

From the Section on Laryngology, Oral and Plastic Surgery, the Mayo Clinic.
Read before the American Laryngological Association, Washington, D. C., May 8, 1933.

1. Quincke, H.: Ueber akutes umschriebenes Hautödem, Monatsh. f. prakt. Dermatol. **1**: 129-131 (July) 1882.
2. Melkersson, E.: A Case of Recurrent Facial Paralysis with Angioneurotic Edema, Hygiea **90**: 737-741 (Sept. 31) 1928.
3. Rosenthal, Curt: Gemeinsames Auftreten von (rezidivierender familiärer) Facialislähmung, angioneurotischem Gesichtsödem und Lingua plicata in Arthritismus-Familien, Ztschr. f. d. ges. Neurol. u. Psychiat. **131**: 475-501, 1931.

The patients gave fairly uniform histories of swelling of the lips and face, coming on rather suddenly, with no signs of local inflammation or premonitory symptoms. In the first attack the patient might awaken in the morning with the upper and lower lip, or both, three or four times the normal size. In a few cases the attacks were preceded by a cold and indisposition, and in others there was a relationship to migraine or menstruation. One patient stated that the attacks were preceded by headache and migraine. Seven patients gave histories of migraine. Seasickness, influenza, overwork, loss of sleep, trauma and exposure to cold were causes that were given for the swelling of the lips and face. Three patients gave histories of trauma to the upper lip; one patient stated that a brother had the same condition. There was no history of relationship to the eating of any particular food other than that one patient stated that the attacks followed eating strawberries. No seasonal relationship was noted.

The patients had no discomfort, except from enlargement of the part and a feeling of fulness. There was no swelling of any part of the body other than the face, mouth and throat. In a few hours to two days the maximal enlargement occurred, and then gradually receded. The condition might last only a few hours or might continue for three weeks. Regions first involved by swelling were as follows: upper lip, thirty-eight cases; cheeks, eleven cases; lower lip, nine cases; nose, four cases; eyelids, three cases, and upper alveolar process, two cases. After the first attack, the lips and face usually returned to their normal appearance, but a slight residual swelling might be left even after the first attack. Repetition of this swelling occurred from three weeks to six months later, affecting the same portions or spreading to other parts of the face.

Usually, after the second or the third attack, swelling remained, and after each succeeding attack, the enlargement of the region increased. One patient, however, stated that he had had the recurring swelling of the lips and face for twenty-five years and that no residual swelling had appeared until two years previous to his examination.

Facial palsy might accompany the swelling or might antedate it by many years. One patient, aged 31 years, stated that the first attack of facial palsy occurred when she was 4 years of age, twenty-two years before the swelling of her face had been noted, and she had had five attacks of facial palsy involving each side of the face. Facial palsy occurred twenty-five years before the swelling in one case, sixteen years before it in one case, ten years before it in one case, six years before it in two cases, five years before it in two cases, three years before it in one case, and six months before it in one case.

*Clinical Observations.*—A soft, nonpitting, smooth, diffuse enlargement, usually involving the lips, was noted. The regions involved by swelling, more than one region in most cases, were as follows: upper lip, fifty-two cases; cheeks, thirty-five cases; lower lip, thirty cases; nose, seven cases; tongue, six cases; eyelids, five cases; upper alveolar process, two cases, and larynx, forehead and soft palate, each one case. The lips might be found three or four times their normal size. The skin over the involved region appeared normal and did not pit on pressure; there was no change in the temperature of the region. In the lips, most of the swelling seemed to occur inside, rolling the lips outward. The lips might be chapped and fissured from the enlargement.

Peripheral facial paralysis occurred in thirteen cases, and in three of these the condition was bilateral. It is apparently caused by swelling about the nerve. The facial paralysis might clear completely, as in Bell's palsy, or it might leave some motor disturbance due to faulty regeneration.

Specimens of tissue were taken for biopsy in a few cases before treatment, but nothing was found other than edematous tissue containing lymphocytes. After

Fig. 1.—A woman, aged 25, had recurring swellings of the face for ten years, from three to six attacks a year, lasting two or three days, leaving the residual swelling of the lips and cheeks.

Fig. 2.—A man, aged 41, had recurring swellings of the lips for seven years. The right side of the face was completely paralyzed nine days previous to examination. Enlargement of the lips and cheeks may be noted.

Fig. 3.—A woman, aged 31, had facial paralysis at the age of 4 years, with four subsequent attacks. Ten years prior to examination, paralysis of the right side of the face developed, with considerable residual paralysis. There were recurring swellings of the upper lip of four and a half years' duration. Residual enlargement of the upper lip has been present for four years. The patient is attempting to close the eyes.

the patients had received repeated treatment, biopsy disclosed fibrous and inflammatory changes in the tissue, as would be expected. General examination in these cases revealed nothing of note that might bear any relationship to the condition. In the cases in which tests for allergy were made, metabolic rates were

Fig. 4.—A man, aged 25, had left facial paralysis at the age of 12 years, paralysis of the right side of the face at 25 years, and swellings of the upper lip for ten years. *A*, enlargement of the lips and complete paralysis on the right side of the face may be noted. *B*, appearance six years later, after treatment and excision of portions of the lips and cheeks.

determined and the state of the sinuses was investigated, with negative results.

*Etiology.*—The cause of the condition is not known. Its similarity, in some respects, to angioneurotic edema, has been mentioned. However, angioneurotic edema occurs elsewhere in the body than the face at the same time that the face is affected, but in this group of cases only the face, mouth and throat were affected.

Fig. 5.—A woman, aged 19, had facial paralysis at the age of 2 years, and swelling of the nose at the age of 7 years. In the twelve years previous to examination there had been swellings of the lips every three weeks, and during the previous two years the cheeks were also swollen with the attacks. *A*, partial paralysis on the right side of the face may be noted. *B*, appearance two years and nine months following treatment and excision of tissue from the inside of the lips and cheeks.

The question of lymphangitis or recurring erysipelas can be excluded.

In seven cases, enlargement was associated with a cold or exposure to cold, or followed attacks of influenza. The usual condition that is thought of as edema causes tenseness of the skin and pitting on pressure, but the residual swelling in these cases is soft and elastic. There is no change in the skin itself. The fact that thirteen of the sixty-seven patients gave histories of facial paralysis or had facial paralysis at the time of examination would indicate a common cause for the recurring swelling and the paralysis.

Suggestions concerning the causative factors of this condition are purely theoretical. Just what produces the increased amount of lymph in the part is indeterminate. One must consider, first, a disturbance of trophic, vasomotor or motor nerves; secondly, alteration in the metabolism or state of nutrition of the tissues, changing the power of the cell to attract, give off or retain fluid; thirdly, some chemical disturbance in the cell, of a complicated nature, that changes the fluid balance, and, fourthly, a possible so-called vital secretory activity of the endothelial cells.

*Treatment.*—Treatment of this condition has consisted of injection of boiling water into the involved parts and irradiation externally over the face. The

Fig. 6.—A youth, aged 16 years: *A*, with permanent enlargement of the upper lip following swelling; *B*, appearance one year and ten months after treatment and excision of a portion of the lip.

patient is anesthetized with nitrous oxide, and the face is then covered with a thick coating of petrolatum, so that any drops of boiling water which fall cannot burn the skin. A metal syringe is used, and a few cubic centimeters of the boiling water is injected into many portions of the involved region. Boiling water is not used about the skin of the nose or the eyelids. This treatment causes considerable local reaction, so that the following day the part is markedly swollen. In a few days the swelling begins to reduce, and it gradually clears. Treatment with radium is given over the involved region, from 3,000 to 4,000 mg. hours with 2 mm. of lead and 1 inch of wood screening being used. The patient is then allowed to go home and is told to come back in three months for observation.

In some cases one treatment accomplished a great deal in preventing recurrence of the swelling, but in others four or five treatments were necessary. When there is no tendency to recurrence of the swelling for a period of six months, the superfluous tissue of the lips or cheeks may be excised, in order to shape up the part to its original size. We have seen patients who

have undergone excision of tissue without the tendency of the condition to recur being stopped before operation; permanent enlargement of the parts has been much greater than before operation was performed. It is essential, first, to eliminate the recurring swelling before attempting operation. Just how the treatment

Fig. 7.—A man, aged 55: *A*, swellings of the eyelids, cheeks and upper lip of fourteen months' duration; permanent enlargement of the eyelids, cheeks and upper lip may be noted. *B*, appearance two years and ten months following treatment and excision of superfluous tissue about the eyelids and cheeks.

stops the swelling is indeterminate. It may be that production of fibrosis in the lymph structures, or change in the cells themselves, prevents swelling of the tissues. The results of treatment have been satisfactory.

## UNILATERAL CHOKED DISK DUE TO CHRONIC TONSILLAR INFECTION

GEORGE WILSON, M.D.
PHILADELPHIA
AND
W. F. DARKES, M.D.
ORWIGSBURG, PA.

The occurrence of choked disk (papilledema) is in the vast majority of cases, probably 90 per cent, due to cerebral neoplasm. Unilateral choking of a disk may also be found in a patient harboring a brain tumor, although as a rule involvement of the other disk soon occurs. However, two recent cases of brain tumor which have come under our observation and which were situated at the base of the right frontal lobe showed unilateral choking of the right disk of 5 and 4 diopters, respectively; the left disk in both cases was normal. When one is confronted with a case showing unilateral or bilateral choking of the disks, the initial and most important step is to rule out brain tumor; when that has been done as completely as possible, search must be made for the more uncommon causes, such as acute and chronic infections, toxemias, certain diseases of unknown etiology (such as multiple sclerosis) and syphilis. Our concern in this presentation is with unilateral choked disk due to chronic infection in the tonsils, of which we have seen two instances. We will not discuss the occurrence of optic neuritis, which is sometimes seen in sinus infection, especially that of the sphenoids and ethmoids. Foci of infection in other parts of the body may also implicate the optic nerves.

Hansell,[1] in 1886, reported two cases of acutely choked disk with sudden loss of vision and a rapid return to normal with treatment; Hansell thought the cause was a rheumatic infection. One of these cases was unilateral. Hansell thought that the papilledema was due to the exudation of serum into the fibrous coat of the nerve producing sufficient local pressure to cause swelling. De Schweinitz,[2] in 1888, related a case of acute unilateral choked disk which at that time he thought due to exposure. He reviewed the case in 1896 and then considered it to be due to a rheumatic infection. Suker [3] cited a case of unilateral optic neuritis, the result of chronic infection in the tonsils. The case was that of a young woman who, in March, 1917, noticed a blurring of vision of the left eye, which went on in the course of a few days to a loss of vision in that eye. The left disk was markedly swollen, although Suker does not give the exact amount of the swelling. Seventy-two hours after the tonsils were removed, vision in the affected eye was normal, and in four weeks the swelling in the disk had disappeared.

Ball,[4] Carpenter [5] and Harry [6] have reported similar cases, although in some of them the optic nerves were involved bilaterally. Harry states that the characteristic features of choked disk due to chronic tonsillitis are its acuteness, its intensity, its unilateral character and the completeness with which it clears up after the removal of the tonsils. In Carpenter's case, reported in 1918, blindness in one eye disappeared after the removal of the tonsil on the same side. It is, of course, a well known fact that a chronic focal infection can produce involvement of a single joint, and it is therefore not unreasonable to assume that a focal infection might implicate one optic nerve. The investigations of Brown and Irons [7] and of Rosenow [8] show clearly the frequency with which iritis and other ocular infections may be due to streptococci and other organisms. We are fully aware that it is possible for any chronic infection to be the cause of optic neuritis, but the two cases that are reported here are clearly due to infection in the tonsils.

### REPORT OF CASES

CASE 1.—*History.*—Mrs. M., a white woman, aged 52, was referred by Drs. John L. Spangler and Chapin Carpenter, March 19, 1931. Her personal, past medical and family histories were unimportant except for the fact that she had had repeated attacks of tonsillitis, and for the past few years mild arthritis in both hands. March 12, she noticed, while reading the morning paper, that the vision in the left eye was poor. She had no other symptoms, such as headache, vomiting or double vision.

*Examination.*—The general and neurologic examinations were negative except for badly diseased tonsils, signs of mild chronic arthritis in the joints of the hands, a systolic murmur at the apex, and pain when the left frontal region was percussed. Dr. Carpenter examined her eyes on March 12 and reported

From the Neurological Department, University of Pennsylvania School of Medicine.

1. Hansell, H. F.: Acute Optic Neuritis of Rheumatic Origin, M. News **48:** 144-146, 1886.
2. de Schweinitz, G. E.: Acute Unilateral Optic Neuritis, Tr. Philadelphia County M. Soc. **9:** 247-252, 1888; Acute Unilateral Optic Neuritis, Tr. Philadelphia Poly. Clin. **5:** 491-495, 1896.
3. Suker, G. F.: Unilateral Optic Neuritis from Tonsillar Infection, Ophth Rec. **26:** 278-280 (June) 1917.
4. Ball, G. H.: Bilateral Optic Neuritis Due to Tonsillar Infection, Arch. Ophth. **49:** 335, 1920.
5. Carpenter: Am. J. Ophth., November, 1918, p. 787.
6. Harry, P. A.: Papillitis Due to Tonsillitis: Three Cases, Brit. J. Ophth. **6:** 216 (May) 1922.
7. Brown, E. V. L., and Irons, E. E.: Etiology of Iritis, Tr. Am. Ophth. Soc., 1918.
8. Rosenow, E. C.: Iritis and Other Ocular Lesions on Intravenous Injections of Streptococci, J. Infect. Dis., 1915, pp. 403-407.

that there were no external abnormalities; the ocular movements were full; tension and pupillary reactions were normal; vision, corrected, was: right eye 5/5, left eye 5/12. Opthalmoscopic investigation of the right eye showed that the media were clear and the nerve normal; of the left, the media were clear and the nerve a choking of 2 diopters. The vessels were congested and buried at the margin of the disk, but there were no hemorrhages. Two days later, hemorrhages appeared on the disk. The right eye remained free of involvement. The visual fields showed a central scotoma for colors and white. A week later Dr. Carpenter reported fresh hemorrhages and an increase of the swelling to 4 diopters.

The roentgenogram of the skull by Dr. George Pillmore was negative for evidence of increased pressure changes and sinus disease. The size and shape of the sella turcica were normal. The count, chemical examination and Wassermann test of the blood and examinations of the spinal fluid and urine were negative except that the total protein content of the spinal fluid was increased to 3 units (normal, 1.5 units).

*Clinical Course and Outcome.*—In the absence of signs indicative of brain tumor, of sinus disease, of syphilis and of any toxic factor such as might occur in kidney disease, it was decided to remove the diseased tonsils of the patient, which was done by Dr. George Coates, April 1. The patient's vision almost immediately began to improve. Dr. Carpenter reexamined her, April 15, and reported that the choking had subsided to 3 diopters; no fresh hemorrhages had occurred; the exudate had been absorbed and the outline of the disk was almost visible in the upper nasal portion; vision was corrected to 5/9, and small test type could be read but with some central blurring. July 9, Dr. Carpenter reported that vision of the left eye was corrected to 20/15, and that the visual field in the left eye was almost normal, there being only a slight central scotoma. The hemorrhages had been completely absorbed but some atrophic changes in the choroid remained. About 0.5 diopter of swelling remained.

CASE 2.—*History.*—Mrs. J., a white woman, aged 28, was referred by Dr. H. G. von Goldberg, Oct. 19, 1931. Her personal, family and past medical histories had no bearing on her present illness, although she had had tonsillitis on one occasion. Four weeks before the examination, when she was perfectly well, she awoke one morning with pain in and over the right eye, and the vision of the right eye was blurred. The pain lasted two days, although at the time she was seen she complained of pain when she moved the right eye. She had seen double on one or two occasions.

*Examinations.*—The general and neurologic examinations were negative with the exception of the presence of enlarged and diseased tonsils. Dr. von Goldberg reported that when he first saw her, October 10, vision in the right eye was 6/12, and in the left, 6/6.

Ophthalmoscopic examinations revealed that the media of the right eye were clear; the disk was elevated 4 diopters; the veins were engorged, small areas of blood dotting the nerve head; the perivascular reflex was entirely obscured and the surrounding retina was hazy. The left eye was normal and there was no ocular palsy. October 17, the swelling of the nerve head had increased to 6 diopters and the vision had dropped to three lines.

*Clinical Course and Outcome.*—The patient was referred to the University Hospital for investigation. Dr. Karl Houser could find no evidence of sinus disease, and Dr. Pancoast's roentgen examination of the sinuses was negative. The roentgenogram of the skull was negative for increased pressure, and the pituitary fossa showed no deformity or enlargement. Urinalysis and examinations of the blood and of the spinal fluid were negative except that the total protein in the spinal fluid was 2.5 units. In view of the experience with case 1, and the negative signs for syphilis, sinus disease and brain tumor, a tonsillectomy was done. The tonsils were removed by Dr. Karl Houser, October 23. A week later, the patient reported a definite improvement in her vision. Dr. von Goldberg noted that on October 31 the vision in the right eye had improved to 6/8; the swelling in the nerve head had subsided to 3 diopters, with corresponding improvement in the surrounding area. November 7, two weeks after the removal of the tonsils and seven weeks after the onset of the trouble, the vision in the right eye was 6/6, the nerve margins were clearly defined except for a small area above and to the nasal side, the hemorrhages on the nerve head were absorbed, and vascular and other changes had returned to normal. The patient was last heard from, Jan. 21, 1933, and reported that her vision had returned to normal.

## COMMENT

There are indeed few bodily complaints that cause as much concern to the patient as disturbance of vision and the fear of blindness that frequently ensues when vision is affected. For a patient, therefore, suddenly to lose vision in one eye is an alarming state of affairs, and when optic neuritis or choked disk is discovered as the cause of that condition, the responsibility of the physician under whose care such a patient falls is great. The triad of symptoms headache, vomiting and choked disks is commonly seen in brain tumor. As mentioned before, the choking of the disks in brain tumor is usually bilateral, and while an attack of sudden temporary blindness may and does occur, the loss of vision in brain tumor is usually gradual. Furthermore, there is a possibility for perfect vision to be found in a patient with a high degree of choking of the disks, if that choking is due to tumor. The characteristic features in our cases and also in cases reported by others are sudden loss of vision, the rapid increase in the swelling and the unilateral involvement, although some have reported bilateral involvement. The removal of the tonsils, in both of our cases badly diseased, produced prompt improvement and a return in a relatively short time to a normal vision and normal state of the involved nerve.

No time should be lost in arriving at a diagnosis. Whether the choking of the disks is unilateral or bilateral, it is imperative to eliminate brain tumor as a probability. When that has been done, the possibility of chronic focal infection should be speedily investigated. If swelling of one or both optic nerves is the only physical sign present, and if the patient does not have headache or other symptoms suggestive of brain tumor, he should not be rushed into an encephalography, a ventriculography or a decompression operation. Cases of the kind reported have probably helped to swell the number of cases referred to so naively by the neurosurgeons as "pseudotumor."

133 South Thirty-Sixth Street.

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**The Demands of the Patient.**—The demands of the intelligent consumer of medical care are in general two; the one, the protection of himself from the acts of other individuals, and the other, his own individual care. For the former, he must rely on the action of the state, for it only has the necessary power of control and functions thus through its public health services. They justifiably invade the individual rights only when public safety is at stake, for the care of the individual per se is a matter of his own business, not that of the state. The demands of the consumer as regards himself alone are two: the one, the prevention of his own illness; the other, the treatment of it. These cannot be segregated, however, into such definite categories, for the treatment of disease is frequently prophylactic against further disease, and that which is meant by prevention of illness is many times the early detection of it. Therefore, the producer of both types of care is preferably the same person, thus simplifying the consumer-producer relationship.—Harvey, S. C.: Oikonomia Medika, *Yale J. Biol. & Med.* **5**:323 (March) 1933.

## *Clinical Notes, Suggestions and New Instruments*

### THE CHANGE PRODUCED IN FAT TISSUE BY THE USE OF INSULIN IN MALNUTRITION

HARRY BLOTNER, M.D., BOSTON

The use of insulin to produce gain in weight in certain cases of nondiabetic malnutrition has proved of great value. The nature of the added weight, however, has been subject to speculation. Falta,[1] who was the first to use insulin for this purpose in adults, believed that the added weight was not due to edema, because he gave theophylline to patients receiving the drug without producing any diuresis. On the other hand, Feissly [2] thought that the administration of insulin caused first the development of increased turgor and subsequently the formation of fat. Contrary to what one might expect, Löw and Krčma [3] found a decrease in the fat and carbohydrate content in the liver of insulinized rats and concluded from this that insulin directs the peroral fat to be stored in the fat depots. Recently, an extensive literature on the use of insulin in nondiabetic malnutrition has accumulated, yet so far no observations have been reported that illustrate the histologic changes occurring in the skin and subcutaneous tissues of patients made to gain weight by this method. This would appear to be an interesting phase of the subject on which to acquire

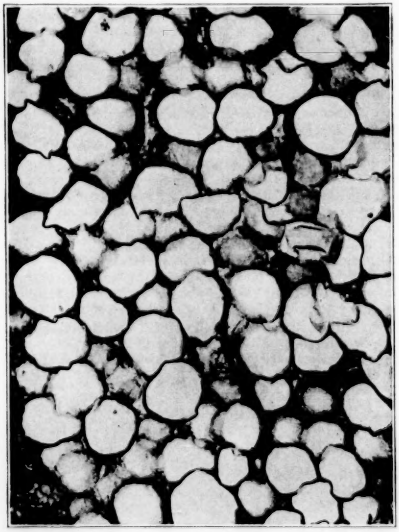

Fig. 1.—Subcutaneous fat cells in malnutrition. The cells are small and are surrounded by a thick membrane; × 300.

data. In this paper, therefore, are reported observations on the changes in the subcutaneous fat and glycogen deposits in the skin and subcutaneous tissue observed to occur in one patient during a period of considerable gain in weight induced by insulin administration.

From the Medical Service of the Peter Bent Brigham Hospital.

1. Falta, W.: Ueber Mastkuren mit Insulin über insulare Fettsucht, Wien. klin. Wchnschr. **38:** 757 (July 2) 1925.

2. Feissly, R.: Traitement insulinique des états de dénutrition chez les subjects non diabétiques, Presse méd. **34:** 196 (Feb. 13) 1926.

3. Löw, A., and Krčma, A.: Inselorgan und Fettstoffwechsel der Leber, Klin. Wchnschr. **11:** 584 (April 2) 1932.

#### PLAN OF INVESTIGATION

This study was made on a woman, aged 34, who first came to the Peter Bent Brigham Hospital in 1927 with tabes dorsalis. She was treated for tabes until 1931, by which time her blood and spinal fluid tests were entirely normal. In 1932 she returned to the hospital, worried because she was so thin. Her usual weight was 103 pounds (46.8 Kg.), but she had lost weight during a period of several years until now she weighed only 80½ pounds (36.6 Kg.). The general physical examination, except for the characteristic reflex changes of an old tabes, was negative. She was 61 inches (155 cm.) tall.

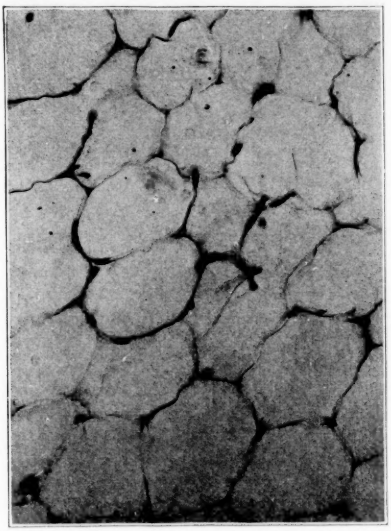

Fig. 2.—Subcutaneous fat cells in malnutrition after a gain in weight of 6.4 Kg. induced by insulin. The cells are much larger, and the membrane surrounding them is much thinner; × 300.

She was taught to inject insulin and took 10 or 15 units three times a day during the period of observation, which lasted from June 10 to Nov. 30, 1932. The patient gave her consent to the removal of fat tissue for study, understanding what was to be done and that it was her voluntary contribution to advancement of knowledge. Three specimens of tissue, each measuring approximately 3.5 cm. by 1 cm., were excised under local anesthesia from the abdominal wall, the first specimen being removed before the use of insulin was started, the second ten weeks later and the third twenty-four weeks later. When the second biopsy was made, the patient had gained 14 pounds (6.4 Kg.), and when the third was made she had gained 21 pounds (9.6 Kg.). The specimens were taken from the abdominal wall transversely over the rectus muscle at the level of the umbilicus and included skin and subcutaneous tissue down to the fascia of the muscle.

Sections for histologic study were prepared by the department of pathology, Zenker fixation, paraffin embedding and eosin-methylene blue staining being used. Best's carmine solution was used for the glycogen stain. The depth of the subcutaneous fat was measured, and the average diameter of the subcutaneous fat cells was estimated with a standard micrometer disk. To make this determination, 300 cells in each section were measured.

#### HISTOLOGIC CHANGES WITH INSULIN THERAPY

After insulin injections were begun and the patient began to gain weight, the depth of the subcutaneous fat and the size of

the fat cells increased remarkably. Before insulin treatment, the fat measured only 3 mm. in depth, and the average diameter of the fat cells in it was 35 microns. The largest diameter of any single fat cell observed was 53 microns, and the smallest 20 microns, most cells appearing of about the average size.

After the patient had gained 14 pounds, the depth of fat had increased to 12 mm., and the average diameter of the fat cells was now 69.6 microns. The largest cell observed

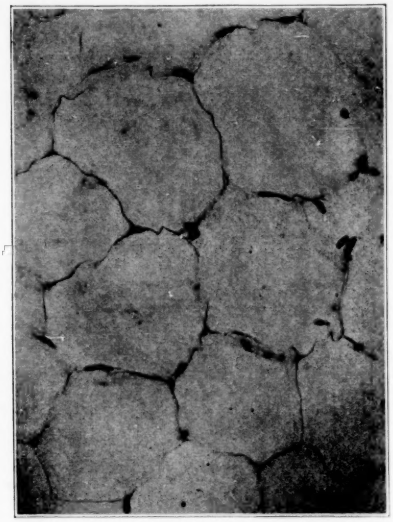

Fig. 3.—Subcutaneous fat cells in malnutrition after a gain in weight of 9.6 Kg. induced by insulin. The cells continue to increase in size and the membrane surrounding them remains thin; × 300.

measured 121 and the smallest 33 microns. When the patient had gained 21 pounds, the depth of the fat layer had increased to 16 mm. and the average diameter of the fat cells had increased to 79.8 microns. The largest cell observed measured 125 microns and the smallest, 33 microns. The majority of the fat cells after insulin treatment appeared to be of about the same size.

Before insulin was administered, the fat cells were small and thick walled. Between the cells was a fair amount of loose

TABLE 1.—*The Average Size of Three Hundred Fat Cells in a Case of Malnutrition*

| | Average Diameter of Fat Cells, Microns | Largest Fat Cell, Microns | Smallest Fat Cell, Microns | Depth of Fat Tissue, Millimeters | Weight of Patient, Pounds |
|---|---|---|---|---|---|
| Before insulin treatment | 35.0 | 53 | 20 | 3 | 80½ |
| After 10 weeks of insulin treatment | 69.6 | 121 | 33 | 12 | 94 |
| After 24 weeks of insulin treatment | 79.8 | 125 | 33 | 16 | 101½ |

textured connective tissue. After the patient had gained weight, the fat cells became so large and distended that the walls looked like a thin membrane, and there was practically no tissue to be seen between them. Apparently this is not a process peculiar to insulin fattening, because, according to Bremer,[4] the reverse process takes place in extreme emaciation.

4. Bremer, J. L.: A Textbook of Histology, ed. 2, Philadelphia, P. Blakiston's Son & Co., 1930, p. 93.

The sections stained for glycogen showed a deposit of glycogen in the hair follicles only, before and during insulin treatment. This deposit, possibly, appeared to be somewhat greater after the period of insulin administration than previously, though the finding was not especially convincing.

### SUMMARY

A study was made on the effect of insulin on the subcutaneous fat and the glycogen in the skin of a case of nondiabetic malnutrition.

After the patient gained 21 pounds on insulin therapy, the depth of the subcutaneous fat of the abdomen increased from 3 mm. to 16 mm., and the average diameter of each fat cell had increased from 35 microns to 79.8 microns.

Before insulin administration, the fat cells appeared small and with a thick wall. After the patient gained with insulin, the fat cells became large and distended, so that the walls looked like a thin membrane.

There was no notable change in the glycogen in the skin.

Apparently, the gain in weight resulting from insulin treatment is due to an actual increase in the fat deposit.

23 Bay State Road.

## MUMMIFICATION OF LEFT ARM FOLLOWING MAMMARY CARCINOMA

OTTO VAN DER VELDE, M.D., HOLLAND, MICH.

The case reported here is one which I have recently observed and studied and which I have discussed with other surgeons and pathologists, none of whom could recall a parallel case either from their own experience or from their knowledge of the literature. The case was of great interest to me because of its rarity and also from the point of view of development.

### REPORT OF CASE

Mrs. D., a white woman, aged 65, whose previous history had been negative, had come under my observation at various times for numerous minor complaints, but all were of psychogenic origin. She was the type of patient who enjoyed poor health. However, in August, 1928, she presented herself with what was considered a fairly early carcinoma of the left breast. There were no apparent signs of axillary metastases. Operation was advised, and a complete amputation was done elsewhere by a competent surgeon, but apparently the axillary glands were not disturbed. An uneventful recovery ensued. She was given some roentgen therapy and advised to report occasionally for observation. For a few years no signs of recurrence appeared. The patient considered herself cured.

In July, 1931, three years following the operation, she presented herself with metastases in the left axilla. Instead of following medical advice, she visited two "fake" cancer clinics with the usual result.

Appearance of mummified arm at time of amputation.

In June, 1932, almost four years following the operation, the left hand began to swell. Edema rapidly developed in the entire arm, with large surface blebs. Two weeks later the finger tips began to turn black, and in two weeks more the entire arm was gangrenous. There was a sharp line of demarcation above which the gangrene did not extend. The arm was kept wrapped in sterile towels; the skin remained unbroken, and consequently the gangrenous state remained dry. There was no odor, and at no time did the patient reveal any signs of toxic absorption. Amputation was finally performed, August 6, with only a scalpel and a saw. No anesthesia was

required. The patient's ears were tightly plugged with cotton. No bleeding was encountered, and no attempt to suture the stump was made. The patient lived for about two months and died from pulmonary metastases.

The accompanying illustration reveals the specimen as it appeared at the time of amputation. It has been properly prepared and preserved in a museum of pathologic specimens.

COMMENT

There are many interesting angles in this case. Complete gangrene of the arm from metastatic carcinoma of the breast is a very rare occurrence. That this gangrene should remain entirely dry and that mummification should take place before the death of the patient are also unique. Furthermore, it seems strange that the patient exhibited no toxic signs. However, when one visualizes what occurred in the process of development, explanations of these various phenomena are simple. Apparently, the axillary metastases developed a complete annular constriction of the axillary blood supply distal to the point at which the acromiothoracic artery arises from the subclavian to form the collateral circulation of the shoulder. Close study will reveal that the venous blood supply, being the more easily compressed, was first shut off and that the edema with huge surface blebs followed. As the metastatic growth increased, the arterial supply was finally obstructed, and the gangrene ensued. The entire process was limited by the collateral circulation of the shoulder. This is demonstrated by the sharp line of demarcation and its location, extending down almost to the lower part of the deltoid muscle on the outer surface but high up in the axilla. The collateral circulation of the shoulder, it will be remembered, is formed by anastomosis of the acromiothoracic artery, which arises from the subclavian artery, with the anterior and posterior circumflex arteries, and with branches of the suprascapular artery.

Apparently the process, as described, in no way directly contributed to the death. Amputation was done for the sake of convenience in the care of the patient and to relieve the psychic effect that this "withered" arm was having on her. Death finally came because of metastases elsewhere.

35 West Eighth Street.

# Council on Pharmacy and Chemistry

## REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT.

PAUL NICHOLAS LEECH, Secretary.

### CALCIUM PEROXIDE-R. & H.; OXONE; SODIUM DIOXIDE DENTAL-R. & H. AND SODIUM PEROXIDE-R. & H. OMITTED FROM N. N. R.

Calcium Peroxide-R. & H. was accepted by the Council as a brand of calcium peroxide-N. N. R. Sodium Dioxide, Dental-R. & H., Sodium Peroxide-R. & H. and Oxone were accepted as brands of sodium peroxide-N. N. R.

The period for which these products of the Roessler & Hasslacher Chemical Co., Inc., were accepted, expired with the close of 1930. When requested, at that time, to submit the current advertising for the products, the firm sent a booklet entitled "Active Oxygen Products," which makes reference to products which do not stand accepted for New and Nonofficial Remedies: namely, magnesium peroxide, zinc peroxide and strontium peroxide, which were omitted from New and Nonofficial Remedies because deemed to be of little value, and zinc perborate, which has not even been considered for acceptance. The firm was informed that this constitutes a conflict with the Council's rule concerning the use of accepted products to advertise unaccepted products and was informed, further, that the accepted products would be eligible for continued acceptance provided this conflict were removed by revision of the advertising booklet. The firm made no reply at this time and failed to reply to a similar request in 1931. In view of the firm's failure to cooperate, the Council omitted Calcium Peroxide-R. & H., Oxone, Sodium Dioxide Dental-R. & H. and Sodium Peroxide-R. & H. from New and Nonofficial Remedies.

# Committee on Foods

## REPORTS OF THE COMMITTEE

THE FOLLOWING PRODUCTS HAVE BEEN ACCEPTED BY THE COMMITTEE ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOLLOWING ANY NECESSARY CORRECTIONS OF THE LABELS AND ADVERTISING TO CONFORM TO THE RULES AND REGULATIONS. THESE PRODUCTS ARE APPROVED FOR ADVERTISING IN THE PUBLICATIONS OF THE AMERICAN MEDICAL ASSOCIATION, AND FOR GENERAL PROMULGATION TO THE PUBLIC. THEY WILL BE INCLUDED IN THE BOOK OF ACCEPTED FOODS TO BE PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION.

RAYMOND HERTWIG, Secretary.

### WORCESTER IODIZED SALT

*Manufacturer.*—Worcester Salt Company, New York City.

*Description.*—Table salt containing added calcium phosphate (0.9 per cent), potassium iodide (0.02 per cent) and sodium bicarbonate (0.08 per cent).

*Manufacture.*—Worcester Plain Salt (see below) is admixed in a batch mixer with the stated proportions of calcium phosphate, potassium iodide and sodium bicarbonate and automatically packed in cartons.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 0.04 |
| Sodium chloride (NaCl) by difference | 98.52 |
| Calcium phosphate | 0.96 |
| Calcium sulphate | 0.41 |
| Calcium chloride | 0.01 |
| Potassium iodide | 0.02 |
| Sodium bicarbonate | 0.08 |

*Micro-Organisms.*—

| | |
|---|---|
| Bacteria colonies per gram | 2 |
| Mold colonies per gram | 1 |

*Claims of Manufacturer.*—The iodized salt is for all table and cooking uses of salt. The added calcium phosphate tends to preserve its free running qualities; the sodium bicarbonate tends to prevent the loss of iodine. The iodine in the salt aids in preventing goiter caused by insufficient iodine in the diet. Used daily as the only salt on the table and in cooking, it richly supplements the iodine of diets deficient in that element and thus helps to protect against goiter.

### WORCESTER SALT

*Manufacturer.*—Worcester Salt Company, New York City.

*Description.*—Table and cooking salt.

*Manufacture.*—The salt is obtained by evaporation of salt brine prepared from rock salt deposits in the earth. Water is pumped down to the salt deposits; the resultant brine is pumped to the surface, treated with lime and sodium carbonate, and stored in tanks to permit insoluble matter to settle out. The brine is filtered and concentrated in "vacuum" evaporators; the salt crystals drop to the bottom and are removed. The salt crystals are centrifugated to remove excess moisture and then dried in rotary driers. The dried salt is screened to grade the crystals according to size. Salt of a definite granulation is packed in paper lined barrels, bags, wax-paper wrapped cartons and asphaltum lined cartons.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 0.04 |
| Sodium chloride (NaCl) (by difference) | 99.6 |
| Calcium sulphate | 0.32 |
| Calcium chloride | 0.02 |

### WORCESTER IVORY SALT
### (1 Per Cent Added Calcium Phosphate)

*Manufacturer.*—Worcester Salt Company, New York City.

*Description.*—Table salt containing 1 per cent added calcium phosphate, which tends to preserve its free running properties.

*Manufacture.*—The preparation is the same as that described for Worcester Salt (see above) excepting that 1 per cent calcium phosphate is added to the final salt before packing.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 0.04 |
| Calcium phosphate | 1.0 |
| Calcium sulphate | 0.45 |
| Calcium chloride | 0.03 |
| Sodium chloride (NaCl) (by difference) | 98.5 |

*Claims of Manufacturer.*—A "free running" salt.

## NUCOA OLEOMARGARINE (Contains Not Over 0.1 per Cent Benzoate of Soda)

*Manufacturer.*—The Best Foods, Incorporated, New York City.

*Description.*—Margarine containing hydrogenated coconut and peanut oils, pasteurized milk cultured with lactic acid bacilli, salt, and sodium benzoate (not over 0.1 per cent).

*Manufacture.*—The hydrogenated coconut and peanut oils, manufactured by the company from the respective refined oils, are blended in such proportions as will yield a margarine of desired melting point, filtered, and deodorized by superheated steam. The blend is churned with pasteurized milk cultured with a carefully controlled strain of lactic acid bacteria, salt and a small quantity of sodium benzoate; it is cooled, allowed to stand for tempering, is reworked and is finally printed into one pound blocks, which are packed in cartons.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 12.0 –14.0 |
| Ash (salt free) | 0.05– 0.10 |
| Sodium chloride (NaCl) | 2.5 – 3.5 |
| Fat | 81.0 –83.0 |
| Protein (N × 6.38) | 0.8 – 1.0 |
| Carbohydrates (by difference) (average) | 1.0 |
| Sodium benzoate | 0.06– 0.09 |

*Calories.*—7.5 per gram; 213 per ounce.

*Claims of Manufacturer.*—For use as a bread spread and as a fat or shortening in baking and cooking or for table purposes.

## HEKMAN'S DUTCH TEA RUSKS

*Manufacturer.*—The Dutch Tea Rusk Company, Holland, Mich.

*Description.*—Round slices of toast prepared from flour, water, sucrose, shortening, malt extract, milk, eggs, yeast, salt, lactose, baking soda and lecithin.

*Manufacture.*—A dough of the indicated ingredients is fermented by the usual bakery procedure and divided into buns. Each bun is separately baked in round covered pans; the baked buns are halved, toasted and packed in cartons.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 5.5 |
| Ash | 0.7 |
| Fat (method I for bread) | 8.7 |
| Protein (N × 6.25) | 12.3 |
| Crude fiber | 0.2 |
| Carbohydrates other than crude fiber (by difference) | 72.6 |

*Calories.*—4.2 per gram; 119 per ounce.

*Claims of Manufacturer.*—For the general diet as well as that of infants and invalids.

## ROTH'S BAMBY WHOLE WHEAT AND WHITE FLOUR BREAD (55 Per Cent Whole Wheat, 45 Per Cent White Flour)

*Manufacturer.*—The A. Roth Baking Company, Newport, Ky.

*Description.*—A whole wheat and white flour bread made by the sponge dough method (method described in THE JOURNAL, March 5, 1932, p. 817); prepared from whole wheat flour, water, white flour, sucrose, lard, yeast, lactic acid, salt, molasses, malt syrup and yeast food containing calcium sulphate, ammonium chloride, sodium chloride and potassium bromate.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture (entire loaf) | 35.8 |
| Ash | 1.5 |
| Fat | 2.5 |
| Protein (N × 6.25) | 11.1 |
| Crude fiber | 0.5 |
| Carbohydrates other than crude fiber (by difference) | 48.6 |

*Calories.*—2.6 per gram; 74 per ounce.

## AMBROSIA FLOUR (FAMILY) BLEACHED

*Manufacturer.*—Texas Star Flour Mills, Galveston, Texas.

*Description.*—An "all purpose" hard wheat patent flour; bleached.

*Manufacture.*—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedure as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with nitrogen trichloride (one-ninth ounce per 196 pounds) and with a mixture of calcium phosphate and benzoyl peroxide (1 part to 50,000 parts of flour).

*Claims of Manufacturer.*—The flour is designed for general baking in the home.

## AMBROSIA FLOUR (BAKERS) BLEACHED

*Manufacturer.*—Texas Star Flour Mills, Galveston, Texas.

*Description.*—A hard winter wheat "patent" flour; bleached.

*Manufacture.*—Selected hard winter wheat is cleaned, scoured, tempered and milled by essentially the same procedures as described in THE JOURNAL, June 18, 1932, page 2210. Chosen flour streams are blended, bleached with nitrogen trichloride (one-tenth ounce per 196 pounds) and with a mixture of calcium phosphate and benzoyl peroxide (1 part to 50,000 parts of flour).

*Claims of Manufacturer.*—The flour is designed for commercial bread bakeries.

## WHOLE BRAN (Flavored with Malt Syrup, Sugar and Salt)

*Manufacturer.*—Postum Company, Inc., Battle Creek, Mich., division of General Foods Corporation, New York.

*Description.*—Steam cooked wheat bran compressed into small thin strands; flavored with malt syrup, sucrose and salt.

*Manufacture.*—The formula ingredients are steam cooked; the cooked mass is forced through dye plates with small perforations and thereby molded into thin strands, which are cut, toasted and packaged in wax paper inserts in cartons.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture | 1.1 |
| Ash | 7.2 |
| Sodium chloride (NaCl) | 2.2 |
| Fat (ether extraction method) | 3.0 |
| Protein (N × 6.31) | 13.9 |
| Reducing sugars as maltose | 9.0 |
| Sucrose (copper reduction method) | 6.7 |
| Crude fiber | 8.3 |
| Carbohydrates other than crude fiber (by difference) | 66.5 |
| Calcium (Ca) | 0.11 |
| Phosphorus (P) | 1.16 |
| Iron (Fe) | 0.025 |

*Calories.*—3.5 per gram; 99 per ounce.

*Vitamins.*—Assay shows the bran to be a good source of vitamin B; 0.6 gram contains one vitamin B unit (Chase and Sherman).

*Claims of Manufacturer.*—For addition to foods to increase indigestible cellulose bulk to counteract constipation due to insufficient bulk in the diet. Without adding materially to the total calories in the adult diet, the bran contributes substantially to the vitamin B content.

## JERRY'S FAMOUS RYE BREAD

*Manufacturer.*—Jerry's Baking Company, Terre Haute, Ind.

*Description.*—A rye bread prepared by the straight dough method (method described in THE JOURNAL, March 18, 1932, p. 889); prepared from "patent" and "clear" wheat flours, dark rye flour, water, potato flour, rye flavor (a syrup of ground caraway and anise seeds and licorice), salt, yeast, malt syrup and sucrose.

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Moisture (entire loaf) | 37.2 |
| Ash | 2.2 |
| Fat | 1.7 |
| Protein (N × 6.25) | 9.9 |
| Crude fiber | 0.5 |
| Carbohydrates other than crude fiber (by difference) | 48.5 |

*Calories.*—2.5 per gram; 71 per ounce.

## PFIZER CALCIUM GLUCONATE

*Manufacturer.*—Charles Pfizer and Company, Inc., New York.

*Description.*—Calcium gluconate: $(C_6H_{11}O_7)_2Ca.H_2O$.

*Manufacture.*—The calcium gluconate is prepared by neutralizing gluconic acid with calcium carbonate or calcium hydroxide. The precipitate of calcium gluconate is filtered out, air dried and packed in various types of containers.

The gluconic acid is prepared by the oxidizing fermentation of dextrose by a bacterium as described for Glucono-Delta Lactone (THE JOURNAL, Feb. 25, 1933, p. 577).

*Analysis* (submitted by manufacturer).—

| | per cent |
|---|---|
| Sugars, not more than | 0.05 |
| Calcium (Ca) | 8.9 |
| Calcium gluconate (monohydrate) | 99.5 |

*Calories.*—2.7 per gram; 77 per ounce. (International Critical Tables **5**: 166.)

*Claims of Manufacturer.*—For increasing the calcium content of refined foods.

# MEDICAL LICENSURE STATISTICS FOR 1932

## ANNUAL PRESENTATION OF LICENSURE STATISTICS BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION INCLUDING DATA REGARDING STATE MEDICAL LICENSING BOARDS, STATE BASIC SCIENCE BOARDS AND THE NATIONAL BOARD OF MEDICAL EXAMINERS

Official reports for the compilation of the data presented herewith have been contributed by the medical licensing boards of all states, the District of Columbia, Alaska, the Canal Zone, Hawaii and Puerto Rico. Included in these statistics are figures from three homeopathic boards (Connecticut, Delaware and Maryland) and from the eclectic board of Arkansas. There are also presented figures from the seven basic science boards (Arkansas, Connecticut, District of Columbia, Minnesota, Nebraska, Washington and Wisconsin) and the National Board of Medical Examiners. Every effort has been made to insure accuracy. The officers of these boards deserve much praise for the completion of their reports, and acknowledgment is here made for their splendid cooperation. In the publication of these statistics, the endeavor has been to show the actual facts, a knowledge of which is always beneficial. The information should be of service to medical schools and licensing boards, as well as to the public.

### TOTAL REGISTRATION

During 1932, 6,945 physicians and 103 osteopaths were licensed to practice as physicians and surgeons, and 14 osteopaths to practice osteopathy and surgery. The methods by which these candidates were certified are described in the following paragraphs.

A comparison of the number registered in each state by examination, and reciprocity and endorsement, is shown in table 1. This table shows also the number registered by these methods who were graduates of approved medical schools. For the purpose of this tabulation, those who completed their work since 1907 in institutions classified by the Council as A and B are listed under "Graduates of Approved Medical Schools." Under "Others" are listed graduates prior to 1907, when the first classification of medical schools was compiled, undergraduates, osteopaths, class C graduates and those of institutions which since December, 1928, when the classification A, B and C was discontinued, have been considered as unapproved. There were 5,191 candidates licensed by examination, as compared with 1,871 by reciprocity and endorsement. The largest number of candiates, 973, were licensed in New York, followed by California with 503; Pennsylvania, 497; Illinois, 438; and Ohio, 399. All other states licensed fewer than 300. The lowest number (10) were registered in Wyoming. Ten physicians were licensed upon recommendation of homeopathic boards. Connecticut licensed 2 physicians by examination and 1 by endorsement, Delaware licensed 2 by examination, and 2 by reciprocity, and Maryland licensed 2 by examination and 1 by endorsement. None were licensed by the homeopathic board of Arkansas. The only eclectic board in existence, Arkansas, licensed one candidate by reciprocity. The figures for the United States territories and possessions include: Alaska, 3 by examination; Canal Zone, 9 by endorsement; Hawaii, 19 by examination, 4 by reciprocity, and Puerto Rico, 10 by examination and 5 by endorsement.

### CANDIDATES EXAMINED

Table 2 gives the results (passed and failed) for all candidates who took examinations in 1932. There were 5,624 examined, of whom 5,191 passed and 433 (7.7 per cent) failed. These came from 65 approved medical schools in the United States and 9 in Canada, 58 medical schools of other countries, 16 medical

TABLE 1.—*Registration by State Boards—1932*

| States | Examination | | Reciprocity and Endorsement | | Total Registered |
|---|---|---|---|---|---|
| | Graduates of Approved Medical Schools | Others | Graduates of Approved Medical Schools | Others | |
| Alabama | 13 | 1 | 19 | 1 | 34 |
| Arizona | 14 | 0 | 9 | 2 | 25 |
| Arkansas | 42 | 1 | 8 | 2 | 53 |
| California | 279 | 64 | 134 | 26 | 503 |
| Colorado | 47 | 12 | 26 | 2 | 87 |
| Connecticut | 67 | 1 | 70 | 0 | 138 |
| Delaware | 6 | 0 | 16 | 2 | 24 |
| District of Columbia | 40 | 3 | 17 | 0 | 60 |
| Florida | 61 | 5 | 0 | 0 | 66 |
| Georgia | 99 | 1 | 12 | 0 | 112 |
| Idaho | 5 | 0 | 10 | 1 | 16 |
| Illinois | 322 | 38 | 73 | 5 | 438 |
| Indiana | 109 | 1 | 24 | 0 | 134 |
| Iowa | 115 | 0 | 42 | 1 | 158 |
| Kansas | 76 | 0 | 38 | 5 | 119 |
| Kentucky | 67 | 1 | 27 | 0 | 95 |
| Louisiana | 110 | 1 | 6 | 0 | 117 |
| Maine | 29 | 1 | 14 | 0 | 44 |
| Maryland | 169 | 7 | 25 | 1 | 202 |
| Massachusetts | 149 | 59 | 55 | 0 | 263 |
| Michigan | 215 | 4 | 69 | 4 | 287 |
| Minnesota | 141 | 1 | 19 | 1 | 162 |
| Mississippi | 27 | 0 | 19 | 0 | 46 |
| Missouri | 156 | 0 | 59 | 6 | 221 |
| Montana | 8 | 0 | 13 | 1 | 22 |
| Nebraska | 67 | 0 | 8 | 0 | 75 |
| Nevada | 4 | 0 | 10 | 1 | 15 |
| New Hampshire | 9 | 0 | 16 | 1 | 26 |
| New Jersey | 108 | 5 | 141 | 7 | 261 |
| New Mexico | 3 | 1 | 10 | 5 | 19 |
| New York | 674 | 43 | 212 | 44 | 973 |
| North Carolina | 86 | 0 | 23 | 0 | 109 |
| North Dakota | 21 | 0 | 5 | 0 | 26 |
| Ohio | 270 | 0 | 126 | 3 | 399 |
| Oklahoma | 60 | 0 | 21 | 1 | 82 |
| Oregon | 31 | 0 | 21 | 0 | 52 |
| Pennsylvania | 454 | 4 | 39 | 0 | 497 |
| Rhode Island | 39 | 1 | 0 | 0 | 40 |
| South Carolina | 40 | 0 | 8 | 2 | 50 |
| South Dakota | 11 | 1 | 12 | 2 | 26 |
| Tennessee | 165 | 0 | 13 | 0 | 178 |
| Texas | 140 | 7 | 67 | 16 | 230 |
| Utah | 24 | 0 | 5 | 0 | 29 |
| Vermont | 21 | 2 | 13 | 2 | 38 |
| Virginia | 115 | 0 | 23 | 2 | 140 |
| Washington | 40 | 2 | 29 | 0 | 71 |
| West Virginia | 25 | 1 | 28 | 0 | 54 |
| Wisconsin | 112 | 4 | 63 | 11 | 190 |
| Wyoming | 2 | 0 | 8 | 0 | 10 |
| U. S. Terr. & Possessions | 30 | 2 | 13 | 5 | 50 |
| Totals | 4,917 | 274 | 1,709 | 162 | 7,062 |
| | 5,191 | | 1,871 | | |

schools now extinct, 7 unapproved institutions and several osteopathic colleges. There were 4,981 graduates of approved medical schools in the United States examined, of whom 3.9 per cent failed; 141 Canadian graduates examined, 12.8 per cent of whom failed; 181 foreign graduates, with 47.5 per cent of failures; 23 who graduated from schools now extinct, with 30.4 per cent of failures, and 298 from unapproved colleges,

(CONTINUED ON PAGE 1242)

| Marginal Number | NAME OF COLLEGE | 1 Alabama P | 1 Alabama F | 2 Arizona P | 2 Arizona F | 3 Arkansas P | 3 Arkansas F | 4 California P | 4 California F | 5 Colorado P | 5 Colorado F | 6 Connecticut P | 6 Connecticut F | 7 Delaware P | 7 Delaware F | 8 Dist. Columbia P | 8 Dist. Columbia F | 9 Florida P | 9 Florida F | 10 Georgia P | 10 Georgia F | 11 Idaho P | 11 Idaho F | 12 Illinois P | 12 Illinois F | 13 Indiana P | 13 Indiana F | 14 Iowa P | 14 Iowa F | 15 Kansas P | 15 Kansas F | 16 Kentucky P | 16 Kentucky F | 17 Louisiana P | 17 Louisiana F | 18 Maine P | 18 Maine F | 19 Maryland P | 19 Maryland F | 20 Massachusetts P | 20 Massachusetts F | 21 Michigan P | 21 Michigan F | 22 Minnesota P | 22 Minnesota F | Marginal Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ARKANSAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | University of Arkansas School of Medicine | 1 | 0 | 1 | 0 | 37 | 0 | | | | | | | | | 1 | 0 | 1 | 0 | | | | | | | | | | | | | 1 | 0 | 4 | 0 | | | | | | | | | | | 1 |
| | CALIFORNIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | College of Medical Evangelists | | | 1 | 0 | 1 | 0 | 62 | 1 | | | | | | | 1 | 0 | 2 | 0 | | | | | | | | | 2 | 0 | | | | | | | 1 | 0 | | | 3 | 0 | | | | | 2 |
| 3 | Stanford University School of Medicine | | | | | | | 38 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | 3 |
| 4 | University of California Medical School | | | | | | | 48 | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 4 |
| | COLORADO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | University of Colorado School of Medicine | | | | | | | 4 | 0 | 43 | 0 | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | 1 | 0 | 1 | 0 | 5 |
| | CONNECTICUT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Yale University School of Medicine | | | | | | | 2 | 0 | | | 9 | 0 | | | | | | | | | | | 1 | 0 | | | 1 | 0 | | | | | 1 | 0 | 2 | 0 | | | 3 | 0 | 2 | 0 | 1 | 0 | 6 |
| | DISTRICT OF COLUMBIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Georgetown University School of Medicine | | | | | | | | | | | 5 | 4 | | | 9 | 1 | | | | | | | | | | | | | | | | | | | | | 22 | 0 | 3 | 2 | | | | | 7 |
| 8 | George Washington University School of Medicine | | | | | | | 1 | 0 | | | 1 | 1 | | | 14 | 0 | | | | | 1 | 0 | | | | | | | | | | | | | | | 12 | 0 | | | | | | | 8 |
| 9 | Howard University College of Medicine | | | | | | | | | | | | | | | 3 | 0 | | | 16 | 0 | | | 1 | 1 | | | | | 6 | 0 | | | 2 | 0 | | | 14 | 2 | 1 | 0 | | | | | 9 |
| | GEORGIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Emory University School of Medicine | | | | | | | 1 | 0 | | | 1 | 0 | | | 8 | 0 | 38 | 0 | | | | | | | | | | | | | | | 1 | 0 | | | 1 | 0 | | | 2 | 0 | | | 10 |
| 11 | University of Georgia Medical Department | | | | | | | | | | | | | | | 8 | 0 | 36 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | 11 |
| | ILLINOIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Loyola University School of Medicine | | | | | | | 5 | 1 | | | 1 | 0 | | | | | 1 | 0 | | | | | 69 | 1 | 5 | 0 | 2 | 0 | | | 1 | 0 | | | 1 | 0 | | | 2 | 0 | 1 | 0 | 12 |
| 13 | Northwestern University Medical School | | | 1 | 0 | | | 23 | 0 | | | | | | | 3 | 0 | | | | | | | 53 | 1 | 3 | 0 | 1 | 0 | 4 | 0 | | | 3 | 0 | | | 1 | 0 | 7 | 0 | 3 | 0 | 13 |
| 14 | University of Chicago, Rush Medical College | 3 | 0 | 2 | 0 | | | 13 | 0 | 2 | 0 | 2 | 0 | | | 1 | 0 | | | | | | | 74 | 4 | 5 | 0 | 3 | 0 | | | | | 3 | 0 | | | | | 1 | 0 | 7 | 0 | 7 | 0 | 14 |
| 15 | University of Chicago, School of Medicine of the Division of the Biological Sciences | | | | | | | | | | | | | | | | | | | | | | | 6 | 1 | | | | | | | | | | | | | | | | | 2 | 0 | | | 15 |
| 16 | University of Illinois College of Medicine | | | | | | | 2 | 1 | | | | | | | 1 | 0 | | | 2 | 0 | | | 96 | 6 | | | | | 1 | 0 | | | 2 | 0 | | | | | 1 | 0 | 1 | 0 | 16 |
| | INDIANA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | Indiana University School of Medicine | | | | | | | 1 | 0 | | | | | | | 1 | 0 | 1 | 0 | | | | | | | 90 | 1 | | | | | | | | | | | | | | | 1 | 0 | 1 | 0 | 17 |
| | IOWA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | State University of Iowa College of Medicine | | | 2 | 0 | | | 6 | 0 | | | | | | | | | | | | | | | 2 | 0 | | | 97 | 0 | | | | | | | | | | | 1 | 0 | | | 4 | 0 | 18 |
| | KANSAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | University of Kansas School of Medicine | | | | | | | 3 | 0 | | | | | | | | | | | | | | | | | | | | | 45 | 0 | | | 2 | 0 | | | | | | | | | 19 |
| | KENTUCKY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | University of Louisville School of Medicine | 1 | 0 | 2 | 0 | | | | | | | 0 | 1 | | | | | 3 | 0 | | | | | | | | | 2 | 0 | | | 56 | 0 | 1 | 0 | | | | | | | | | | | 20 |
| | LOUISIANA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | Tulane University of Louisiana School of Medicine | 5 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | | | | | | | | | 9 | 0 | | | | | | | | | | | | | | | 80 | 0 | | | 1 | 0 | | | | | | | 21 |
| | MARYLAND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | Johns Hopkins University School of Medicine | | | | | | | 3 | 0 | | | 2 | 0 | | | | | 1 | 0 | | | | | | | | | | | | | 1 | 0 | | | | | | | 40 | 0 | 2 | 0 | 2 | 0 | 22 |
| 23 | Univ. of Md. School of Med. & College of P. & S. | | | | | | | | | | | 0 | 1 | | | 1 | 0 | 1 | 0 | | | | | | | | | | | | | 1 | 0 | | | | | | | 61 | 0 | | | | | 23 |
| | MASSACHUSETTS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Boston University School of Medicine | | | | | | | 1 | 1 | | | 5 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 4 | 0 | | | 18 | 3 | | | 24 |
| 25 | Harvard University Medical School | | | | | | | 4 | 0 | 1 | 0 | 3 | 0 | | | | | 1 | 0 | | | | | | | 1 | 0 | 1 | 0 | | | | | | | | | 1 | 0 | | | 28 | 2 | 4 | 0 | 1 | 0 | 25 |
| 26 | Tufts College Medical School | | | | | | | 1 | 0 | | | 10 | 0 | | | | | | | | | | | | | 2 | 0 | | | | | | | | | | | 10 | 0 | | | 59 | 5 | | | | | 26 |
| | MICHIGAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Detroit College of Medicine and Surgery | | | | | | | | | | | | | | | | | | | 0 | 1 | | | | | | | | | | | | | | | | | | | | | | | 59 | 0 | | | 27 |
| 28 | University of Michigan Medical School | | | 1 | 0 | | | 6 | 0 | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | 1 | 0 | | | 3 | 0 | 11 | 3 | 0 | 2 | 0 | 28 |
| | MINNESOTA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | University of Minnesota Medical School | | | 1 | 1 | | | 3 | 0 | | | | | | | | | | | | | | | 4 | 0 | | | 1 | 0 | | | | | | | | | | | | | 1 | 0 | 8 | 5 | 0 | 29 |
| | MISSOURI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | St. Louis University School of Medicine | | | 1 | 0 | | | 8 | 0 | | | 1 | 1 | | | | | 2 | 0 | | | | | 1 | 0 | 1 | 0 | | | 1 | 0 | | | | | | | | | 1 | 1 | | | | | 30 |
| 31 | Washington University School of Medicine | | | | | | | 6 | 0 | | | | | | | | | | | | | | | 2 | 0 | | | | | 2 | 0 | | | 1 | 0 | | | | | 1 | 0 | | | 1 | 0 | 31 |
| | NEBRASKA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | Creighton University School of Medicine | | | | | | | 8 | 2 | | | | | | | | | | | | | | | | | 2 | 0 | 3 | 0 | 7 | 0 | 2 | 0 | 1 | 0 | | | | | | | 1 | 0 | | | 32 |
| 33 | University of Nebraska College of Medicine | | | | | | | 6 | 0 | | | | | | | | | | | | | | | 1 | 0 | | | 3 | 0 | 4 | 0 | | | | | | | | | | | 2 | 0 | | | 33 |
| | NEW YORK | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | Albany Medical College | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 34 |
| 35 | Columbia University College of Phys. & Surg. | | | | | | | 1 | 0 | | | 1 | 0 | | | 2 | 0 | 2 | 0 | | | 1 | 0 | | | | | | | | | 1 | 0 | | | 1 | 0 | 1 | 0 | 2 | 0 | | | 1 | 0 | 35 |
| 36 | Cornell University Medical College | | | | | | | 1 | 0 | | | | | | | | | | | 1 | 0 | 1 | 0 | | | | | | | | | | | | | | | | | 2 | 0 | | | | | 36 |
| 37 | Long Island College of Medicine | | | | | | | | | | | 2 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | 37 |
| 38 | New York Homeo. Med. Coll. and Flower Hospital | | | | | | | | | | | 2 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 38 |
| 39 | Syracuse University College of Medicine | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 39 |
| 40 | University and Bellevue Hospital Medical College | | | | | | | | | | | 4 | 0 | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | 40 |
| 41 | University of Buffalo School of Medicine | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | 1 | 0 | | | 1 | 0 | | | 1 | 0 | 41 |
| 42 | University of Rochester School of Medicine | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | 42 |
| | NORTH CAROLINA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | Duke University School of Medicine | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 43 |
| | OHIO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 44 | Ohio State University College of Medicine | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 44 |
| 45 | University of Cincinnati College of Medicine | | | | | | | 3 | 0 | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | 2 | 0 | | | | | | | | | 1 | 0 | 45 |
| 46 | Western Reserve University School of Medicine | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | 2 | 0 | | | | | 46 |
| | OKLAHOMA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 47 | University of Oklahoma School of Medicine | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | 47 |
| | OREGON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 48 | University of Oregon Medical School | | | | | | | 5 | 0 | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | 1 | 0 | | | 48 |
| | PENNSYLVANIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 49 | Hahnemann Medical College and Hospital of Phila. | | | | | | | 2 | 0 | | | | | 2 | 0 | | | 1 | 0 | | | | | | | | | | | | | 1 | 0 | | | 1 | 0 | 2 | 0 | 1 | 0 | 1 | 0 | | | 49 |
| 50 | Jefferson Medical College of Philadelphia | | | 1 | 1 | | | | | 4 | 0 | 1 | 0 | | | 1 | 1 | | | | | | | | | | | | | | | | | 1 | 0 | 1 | 0 | | | | | 1 | 0 | | | 50 |
| 51 | Temple University School of Medicine | | | | | | | 1 | 0 | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 51 |
| 52 | University of Pennsylvania School of Medicine | | | | | | | 1 | 0 | | | 2 | 0 | | | | | | | | | | | 4 | 0 | | | | | | | 1 | 0 | | | | | 1 | 0 | 3 | 0 | | | 4 | 0 | 52 |
| 53 | University of Pittsburgh School of Medicine | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | 1 | 0 | 1 | 0 | 53 |
| 54 | Woman's Medical College of Pennsylvania | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | 54 |
| | SOUTH CAROLINA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 55 | Medical College of the State of South Carolina | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 0 | 1 | 55 |
| | TENNESSEE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 56 | Meharry Medical College | | | | | 1 | 0 | | | | | | | | | | | 2 | 0 | 4 | 0 | | | | | | | | | | | | | | | 2 | 1 | | | 4 | 0 | | | | | 56 |
| 57 | University of Tennessee College of Medicine | 2 | 0 | | | 1 | 0 | 1 | 0 | | | | | | | | | 5 | 1 | 2 | 0 | | | | | | | | | | | 1 | 0 | 1 | 0 | | | | | 1 | 0 | | | 1 | 0 | 57 |
| 58 | Vanderbilt University School of Medicine | 1 | 0 | | | | | 1 | 0 | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | 58 |
| | TEXAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 59 | Baylor University College of Medicine | | | | | | | 1 | 0 | | | | | | | | | 2 | 0 | | | | | | | | | | | | | | | 2 | 0 | | | 1 | 0 | | | 1 | 0 | 59 |
| 60 | University of Texas School of Medicine | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | 2 | 0 | 60 |

P = Passed; F = Failed

| Marginal Number | 23 Mississippi | | 24 Missouri | | 25 Montana | | 26 Nebraska | | 27 Nevada | | 28 New Hampshire | | 29 New Jersey | | 30 New Mexico | | 31 New York | | 32 North Carolina | | 33 North Dakota | | 34 Ohio | | 35 Oklahoma | | 36 Oregon | | 37 Pennsylvania | | 38 Rhode Island | | 39 South Carolina | | 40 South Dakota | | 41 Tennessee | | 42 Texas | | 43 Utah | | 44 Vermont | | 45 Virginia | | 46 Washington | | 47 West Virginia | | 48 Wisconsin | | 49 Wyoming | | 50 U. S. Territories and Possessions | | Totals | Examined—Passed | Examined—Failed | Percentage of Failures | No. States Examined in | Marginal Number |
|---|---|---

| Marginal Number | NAME OF COLLEGE | 1 Alabama P | F | 2 Arizona P | F | 3 Arkansas P | F | 4 California P | F | 5 Colorado P | F | 6 Connecticut P | F | 7 Delaware P | F | 8 Dist. Columbia P | F | 9 Florida P | F | 10 Georgia P | F | 11 Idaho P | F | 12 Illinois P | F | 13 Indiana P | F | 14 Iowa P | F | 15 Kansas P | F | 16 Kentucky P | F | 17 Louisiana P | F | 18 Maine P | F | 19 Maryland P | F | 20 Massachusetts P | F | 21 Michigan P | F | 22 Minnesota P | F | Marginal Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | VERMONT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 61 | University of Vermont College of Medicine | | | | | | | | | | | 2 | 0 | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | 1 | 0 | 3 | 1 | | | | | 61 |
| | VIRGINIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 62 | Medical College of Virginia | | | | | | | 2 | 0 | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 62 |
| 63 | University of Virginia Department of Medicine | | | | | | | | | | | 1 | 0 | | | 3 | 0 | 1 | 0 | | | | | | | | | | | | | | | 1 | 0 | | | 2 | 0 | 2 | 0 | | | 1 | 0 | 63 |
| | WISCONSIN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 64 | Marquette University School of Medicine | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | 1 | 0 | | | 1 | 0 | 1 | 0 | | | 64 |
| 65 | University of Wisconsin Medical School | | | | | 1 | 0 | | | | | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | 2 | 0 | | | 65 |
| | CANADA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 66 | Dalhousie University Faculty of Medicine | | | | | | | | | | | 1 | 0 | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | 1 | 0 | | | | | 66 |
| 67 | Laval University Faculty of Medicine | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | 0 | 2 | | | | | 67 |
| 68 | McGill University Faculty of Medicine | | | | | 4 | 0 | 1 | 0 | 3 | 0 | | | | | | | | | | | | | 2 | 1 | | | | | | | | | | | 3 | 0 | | | 3 | 0 | | | 1 | 0 | 68 |
| 69 | Queen's University Faculty of Medicine | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | 1 | 0 | | | 69 |
| 70 | University of Alberta Faculty of Medicine | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | | | 70 |
| 71 | University of Manitoba Faculty of Medicine | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | 1 | 0 | | | | | | | | | | | | | 2 | 0 | | | 71 |
| 72 | University of Montreal Faculty of Medicine | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | 0 | 1 | | | | | 72 |
| 73 | University of Toronto Faculty of Medicine | | | | | | | | | | | 2 | 0 | | | | | 1 | 0 | | | | | | | | | 1 | 0 | | | | | | | 1 | 0 | | | 2 | 0 | 5 | 0 | 1 | 0 | 73 |
| 74 | University of Western Ontario Medical School | | | | | | | | | | | | | 1 | 0 | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | | | 1 | 0 | 1 | 0 | 74 |
| 75 | Foreign Medical Colleges | 1 | 0 | | | 8 | 8 | | | 0 | 1 | | | 2 | 0 | 1 | 0 | | | | | 6 | 3 | 1 | 0 | | | 1 | 0 | 0 | 1 | 1 | 0 | 6 | 3 | 3 | 2 | 2 | 0 | 1 | 0 | | | 75 |
| 76 | Graduates of Extinct Medical Colleges | | | 2 | 0 | 0 | 1 | | | | | | | 5 | 3 | 1 | 0 | | | | | 0 | 1 | | | | | | | 1 | 1 | | | 2 | 0 | | | 2 | 0 | | | | | 76 |
| 77 | Graduates of Unapproved Colleges and Undergraduates | | | | | 56 | 2 | 12 | 3 | 1 | 3 | | | | | 1 | 0 | | | | | 32 | 9 | | | | | | | 1 | 0 | | | | | | | | | 35 | 1 | 12 | | | | 77 |
| 78 | Totals by states | 14 | 16 | 43 | 363 | 62 | 80 | 6 | 44 | 72 | 100 | 5 | 388 | 111 | 115 | 76 | 68 | 114 | 30 | 181 | 340 | 219 | 142 | 78 | | | | | | | | | | | | | | | | | | | | | | |
| 79 | Totals—Examined—Passed | 14 | 14 | 43 | 343 | 59 | 68 | 6 | 43 | 66 | 100 | 5 | 360 | 110 | 115 | 76 | 68 | 111 | 30 | 176 | 208 | 219 | 142 | 79 | | | | | | | | | | | | | | | | | | | | | | |
| 80 | Totals—Examined—Failed | 0 | 2 | 0 | 20 | 3 | 12 | 0 | 1 | 6 | 0 | 0 | 28 | 1 | 0 | 0 | 0 | 3 | 0 | 5 | 132 | 0 | 0 | 80 | | | | | | | | | | | | | | | | | | | | | | |
| 81 | Percentage of Failures | 0.0 | 12.5 | 0.0 | 5.5 | 4.8 | 15.0 | 0.0 | 2.3 | 8.3 | 0.0 | 0.0 | 7.2 | 0.9 | 0.0 | 0.0 | 0.0 | 2.6 | 0.0 | 2.8 | 38.8 | 0.0 | 0.0 | 81 | | | | | | | | | | | | | | | | | | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | | | | | | | | | | | | | | | | | | | | | | | |

P = Passed; F = Failed.

*(CONTINUED FROM PAGE 1239)*

44.3 per cent of whom failed. There were 47 fewer examined than in 1931; 35 fewer passed but 88 more failed. Fourteen schools had more than 10 per cent of failures.

### PHYSICIANS REGISTERED BY RECIPROCITY AND ENDORSEMENT

Table 3 shows that 1,848 physicians were registered by various states and territories in 1932 on the presentation of satisfactory credentials. The physicians so accepted presented licenses from other states, Canada or foreign countries, or the certificate of the National Board of Medical Examiners or one of the government services. In an increasing number of states the boards now accept a physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. The following 29 states and the District of Columbia generally will register, without examination, licentiates who present satisfactory evidence of good moral character and practice record, and, in addition thereto, credentials which correspond to those required by their respective states at the time such licenses were issued:

| | | |
|---|---|---|
| Alabama | Maine | North Carolina |
| Arizona | Maryland | Oklahoma |
| California | Michigan | Oregon |
| Colorado | Minnesota | Pennsylvania |
| Connecticut | Missouri | South Carolina |
| Delaware | Nebraska | South Dakota |
| District of Columbia | Nevada | Texas |
| Georgia | New Hampshire | Utah |
| Idaho | New Jersey | Vermont |
| Illinois | New Mexico | Wisconsin |

California (when ten or more years has intervened), Connecticut, Illinois and Minnesota require a practical or oral examination of reciprocity candidates, before a license is granted by this means.

Florida, Massachusetts and Rhode Island do not have reciprocal or endorsement arrangements with any state.

New York granted the greatest number of licenses by this method in 1932 (256), California was second with 154, New Jersey third with 148 and Ohio fourth with 129. The largest group presenting the same type of credentials were the 325 diplomates of the National Board of Medical Examiners; the next greatest number (127) came from New York, and Illinois was third with 119.

Six candidates were licensed on the basis of Canadian credentials (New Mexico, 1; New York, 4, and Vermont, 1) and 7 were registered by endorsement of foreign degrees or licenses (Germany, 3; Malta, 1; Scotland, 1; Syria, 1, and Turkey, 1). Three physicians were registered by endorsement of licenses issued in Puerto Rico. Eighteen physicians were licensed in New York on presentation of medical diplomas from Austria, 4; Hungary, 8; Italy, 1; Rumania, 1; Russia, 1; Scotland, 1, and Syria, 1, and 1 physician was licensed on the presentation of a diploma from the medical school of the University of Buffalo.

In addition, 23 osteopaths were granted licenses to practice. In California and Texas, 6 and 9, respectively, were granted privileges as physicians and surgeons and 8 in Wisconsin were licensed to practice osteopathy and surgery.

### COMPARISON WITH OTHER YEARS

In table 4 are listed the total number of candidates registered in the various states in the past five years, with the numbers examined (passed and failed), and those licensed by reciprocity and endorsement. In the past five years, New York has registered 5,351 candidates, California 2,902, Illinois 2,357, and Pennsylvania 2,299. The percentage of candidates who failed in the examinations in the last five years and the percentage of the total licensed by reciprocity and endorsement are given in the last two columns. The proportion of failures in all the states has increased from 6.6 per cent in

| Marginal Number | Mississippi | | Missouri | | Montana | | Nebraska | | Nevada | | New Hampshire | | New Jersey | | New Mexico | | New York | | North Carolina | | North Dakota | | Ohio | | Oklahoma | | Oregon | | Pennsylvania | | Rhode Island | | South Carolina | | South Dakota | | Tennessee | | Texas | | Utah | | Vermont | | Virginia | | Washington | | West Virginia | | Wisconsin | | Wyoming | | U. S. Territories and Possessions | | Totals | Examined—Passed | Examined—Failed | Percentage of Failures | No. States Examined in | Marginal Number |
|---|---|---

TABLE 3.—*Physicians Registered by Reciprocity and Endorsement—1932*

| State | Total Registered in Each State | Alabama | Arizona | Arkansas | California | Colorado | Connecticut | Delaware | Dist. Columbia | Florida | Georgia | Idaho | Illinois | Indiana | Iowa | Kansas | Kentucky | Louisiana | Maine | Maryland | Massachusetts | Michigan | Minnesota | Mississippi | Missouri | Montana | Nebraska | Nevada | New Hampshire | New Jersey | New Mexico | New York | North Carolina | North Dakota | Ohio | Oklahoma | Oregon | Pennsylvania | Rhode Island | South Carolina | South Dakota | Tennessee | Texas | Utah | Vermont | Virginia | Washington | West Virginia | Wisconsin | Wyoming | U. S. Govt. Services | Nat. Bd. of Med. Ex. | U. S. Possessions | Canadian and Foreign | Special Exemption |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Marginal No. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 |
| Alabama | 20 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .. | .. | .. | 3 | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | 5 | .. | .. | 3 | .. | .. | .. | .. | 1 | 1 | .. | .. | .. |
| Arizona | 11 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Arkansas | 10 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. | 1 | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| California | 154 | .. | 3 | 2 | .. | 4 | 1 | .. | .. | 1 | 2 | 1 | 17 | 1 | 10 | 4 | .. | 3 | 2 | 5 | 1 | 2 | 13 | .. | 5 | 3 | 5 | .. | .. | 1 | .. | 9 | .. | 3 | 11 | 3 | 4 | 5 | 1 | .. | 1 | 1 | 7 | .. | 2 | 2 | .. | 1 | 6 | 11 | .. | .. | .. |
| Colorado | 28 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | 2 | 1 | .. | .. | .. | .. | .. | 1 | 2 | .. | 4 | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | .. | 1 | 5 | .. | .. | .. |
| Connecticut | 70 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | 1 | .. | 1 | 4 | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 14 | .. | .. | 2 | .. | .. | 3 | .. | .. | .. | 1 | 1 | .. | .. | 1 | .. | .. | 1 | .. | 33 | .. | .. | .. |
| Delaware | 18 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 4 | .. | 2 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | .. |
| Dist. of Columbia | 17 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Florida | 0 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Georgia | 12 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. |
| Idaho | 11 | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | 2 | .. | .. | .. |
| Illinois | 78 | .. | .. | .. | 2 | 3 | .. | .. | .. | .. | 3 | .. | .. | 7 | 2 | 1 | 1 | 1 | 1 | .. | 7 | 2 | .. | 15 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 4 | .. | .. | 3 | .. | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 6 | 15 | .. | .. | .. |
| Indiana | 24 | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | 2 | .. | .. | .. | .. | 5 | .. | 1 | 2 | .. | 1 | .. | .. | .. | .. | 3 | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| Iowa | 43 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 9 | 1 | .. | 3 | .. | .. | .. | 3 | .. | 4 | .. | .. | 4 | .. | 7 | .. | 1 | .. | .. | .. | .. | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 4 | .. | .. | .. |
| Kansas | 43 | .. | .. | 1 | 1 | 2 | .. | 1 | .. | .. | .. | .. | 6 | .. | 5 | .. | 1 | 1 | .. | .. | .. | .. | 1 | .. | 5 | .. | 4 | .. | .. | .. | .. | .. | 1 | 1 | 2 | 2 | .. | .. | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | 3 | .. | 2 | .. | .. | .. |
| Kentucky | 27 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | 1 | .. | 1 | .. | 2 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. | 2 | .. | .. | 5 | .. | .. | 2 | .. | 2 | .. | .. | .. | 4 | .. | .. | .. |
| Louisiana | 6 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Maine | 14 | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. | 1 | .. | .. | .. | 3 | 2 | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. |
| Maryland | 26 | 1 | .. | .. | 1 | .. | .. | .. | 5 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | 2 | 1 | 1 | 1 | .. | 1 | 2 | .. | .. | 1 | .. | .. | 2 | .. | 2 | .. | .. | .. | 3 | .. | .. | .. |
| Massachusetts | 55 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 55 | .. | .. | .. |
| Michigan | 64 | .. | .. | 1 | 1 | 1 | .. | .. | .. | .. | .. | .. | 13 | 4 | 5 | 3 | .. | .. | .. | .. | 1 | .. | 2 | .. | .. | .. | 1 | .. | 1 | .. | 1 | .. | 1 | 8 | 2 | .. | 3 | .. | 1 | .. | 3 | 2 | .. | .. | 2 | .. | 4 | 4 | .. | .. | .. | .. |
| Minnesota | 20 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 7 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 4 | .. | .. | .. |
| Mississippi | 19 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | 1 | 7 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 6 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Missouri | 65 | .. | .. | 3 | .. | .. | .. | .. | .. | .. | 1 | .. | 7 | .. | 3 | 14 | .. | 1 | .. | 1 | .. | 3 | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | 2 | 4 | .. | .. | .. | .. | .. | 8 | .. | .. | .. | 1 | .. | .. | .. | 13 | .. | .. | .. |
| Montana | 14 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | 3 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | .. | .. | .. | .. |
| Nebraska | 8 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Nevada | 15 | .. | .. | .. | 3 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | 2 | .. | .. | .. | .. | .. | .. | 5 | .. | .. | .. |
| New Hampshire | 17 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. |
| New Jersey | 148 | 1 | .. | 2 | 1 | .. | 1 | 2 | .. | 2 | .. | 3 | 2 | 1 | 2 | 1 | 2 | 1 | 9 | 2 | 3 | .. | .. | 2 | .. | .. | .. | .. | 1 | .. | 64 | 3 | .. | 2 | .. | .. | 17 | 1 | .. | 5 | 1 | .. | 2 | 1 | .. | 1 | .. | .. | 14 | .. | .. | .. |
| New Mexico | 15 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. |
| New York | 256 | 1 | .. | .. | 3 | 1 | .. | 1 | .. | 1 | 1 | .. | 6 | 3 | 9 | .. | 1 | 1 | 1 | 31 | 4 | 9 | 6 | .. | .. | .. | .. | .. | 1 | 8 | .. | .. | 6 | .. | 11 | .. | .. | 7 | .. | .. | 11 | 7 | 1 | .. | 15 | 1 | .. | 4 | .. | 74 | 3 | 10 | 18 |
| North Carolina | 23 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 2 | .. | .. | .. | .. | 1 | .. | .. | 5 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 3 | .. | 2 | .. | 1 | .. | .. | .. | 1 | .. | .. | 1 | .. | 2 | .. | .. | .. |
| North Dakota | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. |
| Ohio | 129 | .. | .. | 2 | .. | 1 | .. | .. | .. | .. | 2 | .. | 6 | 8 | 1 | 1 | 9 | 1 | .. | 5 | .. | 25 | .. | .. | 18 | .. | .. | .. | .. | .. | .. | 10 | 2 | .. | .. | 1 | .. | 8 | .. | .. | 6 | .. | .. | .. | 1 | .. | 4 | 3 | .. | 15 | .. | .. | .. |
| Oklahoma | 22 | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | 2 | 1 | .. | .. | .. | .. | 1 | 1 | 3 | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. |
| Oregon | 21 | .. | .. | .. | 2 | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 2 | 1 | .. | 1 | 1 | 1 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 1 | .. | 2 | .. | .. | .. | 4 | .. | .. | .. |
| Pennsylvania | 39 | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. | .. | 2 | 2 | 7 | 2 | .. | 2 | .. | .. | .. | .. | 1 | .. | 3 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | 1 | .. | 1 | .. | 12 | .. | .. | .. |
| Rhode Island | 0 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| South Carolina | 10 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. |
| South Dakota | 14 | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 2 | .. | .. | .. | .. | .. | 1 | 4 | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Tennessee | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 | 1 | .. | 1 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 2 | .. | .. | .. |
| Texas | 74 | .. | .. | 2 | 2 | 3 | .. | .. | .. | .. | 1 | .. | 2 | .. | 1 | 7 | 12 | .. | .. | .. | .. | 2 | 3 | 5 | 4 | .. | 1 | .. | .. | .. | .. | 1 | .. | .. | 1 | 7 | .. | 3 | .. | .. | 1 | 12 | .. | .. | .. | .. | 2 | 1 | .. | .. | .. | .. |
| Utah | 5 | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Vermont | 15 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | .. | .. | .. | 2 | 1 | 2 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | 3 | .. | 2 | .. |
| Virginia | 25 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 3 | 3 | .. | 2 | 1 | .. | 1 | .. | .. | 3 | .. | .. | .. | .. | .. | 1 | .. | .. | 6 | .. | .. | .. |
| Washington | 29 | .. | .. | .. | 2 | .. | .. | .. | .. | .. | 2 | .. | .. | 1 | .. | 1 | .. | .. | .. | 1 | .. | .. | 2 | .. | 1 | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 13 | .. | .. | .. |
| West Virginia | 28 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | 1 | .. | .. | 3 | .. | 1 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 3 | .. | .. | 1 | .. | .. | .. | 2 | 1 | 1 | .. | 9 | .. | .. | .. | 2 | .. | .. | .. |
| Wisconsin | 66 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 21 | 4 | 2 | 2 | 1 | .. | .. | .. | 2 | 12 | .. | 7 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | 5 | 1 | .. | .. | .. | 1 | 1 | 1 | .. | .. | 1 | .. | .. | .. | .. | 2 | .. | .. | .. |
| Wyoming | 8 | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| U. S. Territories and Possessions | 18 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 5 | .. | .. | 9 |
| Totals | 1,848 | 9 | 4 | 19 | 27 | 24 | 3 | 4 | 10 | 2 | 22 | 4 | 119 | 29 | 60 | 39 | 34 | 36 | 6 | 89 | 20 | 88 | 67 | 15 | 82 | 5 | 36 | 0 | 5 | 14 | 0 | 127 | 24 | 12 | 71 | 28 | 10 | 71 | 2 | 7 | 5 | 86 | 25 | 14 | 6 | 52 | 10 | 19 | 24 | 1 | 14 | 325 | 3 | 13 | 27 |
| Marginal No. | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 50 | 51 | 52 | 53 | 54 |

## OTHER THAN GRADUATES OF APPROVED SCHOOLS LICENSED 1926-1932

Methods by which graduates of other than approved schools have been licensed during the past seven years are given in table 7. Some interesting developments in the various states may be noted by a study of this table. The total number of such licentiates decreased in 1932 by sixteen, the figure licensed in the previous year.

The osteopathic board of California issues two types of licenses. The certificate issued to a licentiate authorizes him to treat diseases, injuries, deformities or other physical or mental conditions without the use of drugs or medical preparations "and without in any manner severing or penetrating any of the tissues of human beings except the severing of the umbilical cord." If the licentiate obtains a physician's and surgeon's cer-

TABLE 4.—*Total Registration—Examination, Reciprocity and Endorsement—1928-1932*

| | 1928 | | | 1929 | | | 1930 | | | 1931 | | | 1932 | | | Totals for 5 Yrs. | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Examined | | | Examined | | | Examined | | | Examined | | | Examined | | | | | | | |
| | Passed | Failed | Reciprocity and Endorsement | Passed | Failed | Reciprocity and Endorsement | Passed | Failed | Reciprocity and Endorsement | Passed | Failed | Reciprocity and Endorsement | Passed | Failed | Reciprocity and Endorsement | Examined | Reciprocity and Endorsement | Registered | Percentage Failed in Examination | Percentage Licensed by Reciprocity and Endorsement |
| Alabama | 23 | 0 | 40 | 34 | 1 | 30 | 27 | 1 | 37 | 20 | 0 | 21 | 14 | 0 | 30 | 131 | 148 | 277 | 1.5 | 53.4 |
| Arizona | 13 | 2 | 36 | 11 | 1 | 46 | 19 | 0 | 36 | 20 | 1 | 28 | 14 | 2 | 11 | 83 | 157 | 234 | 7.2 | 67.1 |
| Arkansas | 47 | 0 | 18 | 82 | 0 | 26 | 25 | 0 | 21 | 29 | 0 | 18 | 43 | 0 | 10 | 226 | 93 | 319 | 0.0 | 29.2 |
| California | 371 | 20 | 225 | 393 | 40 | 268 | 329 | 31 | 243 | 374 | 17 | 196 | 343 | 20 | 160 | 1,938 | 1,092 | 2,902 | 6.6 | 37.6 |
| Colorado | 66 | 15 | 40 | 50 | 0 | 40 | 55 | 0 | 49 | 48 | 2 | 25 | 59 | 3 | 28 | 298 | 173 | 451 | 6.7 | 38.4 |
| Connecticut | 67 | 5 | 35 | 68 | 3 | 36 | 51 | 10 | 39 | 66 | 4 | 31 | 68 | 12 | 70 | 354 | 211 | 531 | 9.6 | 39.7 |
| Delaware | 10 | 0 | 10 | 11 | 0 | 7 | 7 | 1 | 11 | 12 | 0 | 5 | 6 | 0 | 18 | 47 | 51 | 97 | 2.1 | 52.6 |
| District of Columbia | 104 | 0 | 18 | 51 | 1 | 13 | 34 | 0 | 24 | 27 | 0 | 9 | 43 | 1 | 17 | 261 | 81 | 340 | 0.8 | 23.8 |
| Florida | 72 | 3 | 0 | 72 | 3 | 0 | 71 | 8 | 0 | 55 | 5 | 1 | 66 | 6 | 0 | 361 | 1 | 337 | 6.9 | 0.3 |
| Georgia | 91 | 0 | 19 | 78 | 0 | 11 | 72 | 0 | 12 | 77 | 0 | 14 | 100 | 0 | 12 | 418 | 68 | 486 | 0.0 | 14.0 |
| Idaho | 5 | 1 | 11 | 5 | 2 | 15 | 7 | 0 | 9 | 5 | 0 | 18 | 5 | 0 | 11 | 30 | 64 | 91 | 10.0 | 70.3 |
| Illinois | 345 | 30 | 112 | 381 | 22 | 113 | 388 | 38 | 119 | 365 | 24 | 96 | 360 | 28 | 78 | 1,981 | 518 | 2,357 | 7.2 | 22.0 |
| Indiana | 103 | 0 | 42 | 116 | 0 | 42 | 116 | 0 | 37 | 124 | 0 | 43 | 110 | 1 | 24 | 570 | 188 | 757 | 0.2 | 24.8 |
| Iowa | 110 | 1 | 34 | 100 | 0 | 32 | 112 | 0 | 45 | 109 | 1 | 66 | 115 | 0 | 43 | 548 | 222 | 769 | 0.4 | 29.0 |
| Kansas | 53 | 0 | 26 | 81 | 0 | 32 | 75 | 0 | 34 | 74 | 0 | 41 | 76 | 0 | 43 | 359 | 176 | 535 | 0.0 | 32.9 |
| Kentucky | 77 | 0 | 46 | 65 | 1 | 51 | 76 | 3 | 33 | 64 | 1 | 35 | 68 | 0 | 27 | 355 | 192 | 542 | 1.4 | 35.4 |
| Louisiana | 107 | 1 | 13 | 97 | 0 | 9 | 59 | 1 | 10 | 102 | 1 | 10 | 111 | 3 | 6 | 522 | 48 | 564 | 1.1 | 8.5 |
| Maine | 29 | 1 | 12 | 24 | 0 | 13 | 22 | 1 | 15 | 30 | 0 | 11 | 30 | 0 | 14 | 139 | 65 | 200 | 2.2 | 32.5 |
| Maryland | 116 | 4 | 31 | 106 | 0 | 26 | 120 | 1 | 27 | 153 | 3 | 17 | 176 | 5 | 26 | 684 | 127 | 798 | 1.9 | 15.9 |
| Massachusetts | 222 | 91 | 31 | 211 | 84 | 41 | 232 | 78 | 44 | 213 | 104 | 41 | 208 | 132 | 55 | 1,575 | 212 | 1,298 | 31.0 | 16.3 |
| Michigan | 253 | 2 | 91 | 266 | 1 | 101 | 302 | 0 | 92 | 260 | 0 | 97 | 219 | 0 | 64 | 1,303 | 445 | 1,745 | 0.2 | 25.5 |
| Minnesota | 156 | 0 | 47 | 155 | 0 | 39 | 176 | 0 | 26 | 150 | 0 | 29 | 142 | 0 | 29 | 779 | 132 | 901 | 0.0 | 16.3 |
| Mississippi | 24 | 0 | 29 | 27 | 0 | 23 | 31 | 2 | 21 | 35 | 0 | 18 | 27 | 0 | 19 | 146 | 110 | 254 | 1.4 | 43.3 |
| Missouri | 105 | 1 | 74 | 116 | 1 | 79 | 149 | 0 | 72 | 157 | 0 | 44 | 156 | 0 | 65 | 685 | 334 | 1,017 | 0.3 | 32.8 |
| Montana | 12 | 1 | 14 | 9 | 0 | 9 | 13 | 0 | 15 | 7 | 0 | 3 | 8 | 0 | 14 | 50 | 55 | 104 | 2.0 | 52.9 |
| Nebraska | 69 | 2 | 8 | 67 | 0 | 9 | 65 | 0 | 7 | 57 | 0 | 17 | 67 | 0 | 8 | 327 | 49 | 374 | 0.6 | 13.1 |
| Nevada | 6 | 3 | 10 | 2 | 2 | 15 | 2 | 0 | 15 | 2 | 0 | 27 | 4 | 1 | 11 | 22 | 78 | 94 | 27.3 | 83.0 |
| New Hampshire | 1 | 0 | 17 | 2 | 0 | 18 | 1 | 0 | 27 | 6 | 0 | 29 | 9 | 0 | 17 | 19 | 108 | 127 | 0.0 | 85.0 |
| New Jersey | 60 | 5 | 181 | 70 | 2 | 220 | 82 | 3 | 185 | 91 | 5 | 199 | 113 | 7 | 148 | 458 | 933 | 1,349 | 5.0 | 69.2 |
| New Mexico | 0 | 1 | 18 | 1 | 0 | 23 | 0 | 0 | 31 | 0 | 0 | 37 | 4 | 0 | 15 | 6 | 124 | 129 | 16.7 | 96.1 |
| New York | 835 | 123 | 226 | 900 | 143 | 232 | 810 | 108 | 231 | 838 | 146 | 267 | 717 | 179 | 256 | 4,759 | 1,251 | 5,351 | 14.6 | 23.4 |
| North Carolina | 69 | 4 | 32 | 97 | 8 | 45 | 85 | 5 | 29 | 74 | 0 | 30 | 86 | 1 | 23 | 429 | 159 | 570 | 4.2 | 27.9 |
| North Dakota | 14 | 1 | 10 | 17 | 5 | 3 | 16 | 2 | 6 | 16 | 1 | 7 | 21 | 0 | 5 | 93 | 31 | 115 | 9.7 | 27.0 |
| Ohio | 288 | 8 | 111 | 272 | 1 | 121 | 231 | 1 | 113 | 259 | 7 | 125 | 270 | 10 | 129 | 1,347 | 599 | 1,919 | 2.0 | 31.2 |
| Oklahoma | 54 | 0 | 39 | 54 | 0 | 45 | 52 | 0 | 45 | 51 | 0 | 29 | 60 | 0 | 22 | 271 | 180 | 451 | 0.0 | 39.9 |
| Oregon | 34 | 4 | 32 | 31 | 4 | 38 | 32 | 1 | 33 | 40 | 1 | 24 | 31 | 1 | 21 | 179 | 148 | 316 | 6.2 | 46.8 |
| Pennsylvania | 376 | 5 | 51 | 399 | 4 | 43 | 421 | 9 | 42 | 419 | 6 | 51 | 458 | 8 | 39 | 2,105 | 226 | 2,290 | 1.5 | 9.8 |
| Rhode Island | 25 | 3 | 3 | 59 | 0 | 2 | 73 | 2 | 7 | 36 | 0 | 7 | 49 | 1 | 0 | 230 | 19 | 243 | 2.2 | 7.8 |
| South Carolina | 46 | 0 | 12 | 29 | 0 | 9 | 37 | 0 | 5 | 47 | 0 | 7 | 49 | 0 | 10 | 198 | 43 | 242 | 0.0 | 17.8 |
| South Dakota | 12 | 0 | 11 | 11 | 0 | 15 | 17 | 0 | 13 | 16 | 0 | 24 | 12 | 0 | 14 | 68 | 77 | 145 | 0.0 | 53.1 |
| Tennessee | 129 | 0 | 22 | 153 | 0 | 19 | 155 | 0 | 19 | 198 | 3 | 26 | 165 | 1 | 13 | 804 | 99 | 889 | 0.5 | 11.0 |
| Texas | 141 | 5 | 171 | 148 | 0 | 206 | 147 | 0 | 246 | 154 | 2 | 171 | 147 | 0 | 83 | 744 | 877 | 1,614 | 0.9 | 54.3 |
| Utah | 4 | 0 | 10 | 8 | 0 | 23 | 10 | 0 | 7 | 10 | 0 | 16 | 24 | 0 | 5 | 56 | 61 | 117 | 0.0 | 52.1 |
| Vermont | 31 | 0 | 4 | 31 | 1 | 11 | 19 | 0 | 8 | 20 | 0 | 5 | 23 | 0 | 15 | 125 | 43 | 167 | 0.8 | 25.8 |
| Virginia | 105 | 0 | 30 | 120 | 3 | 33 | 122 | 5 | 28 | 101 | 2 | 35 | 115 | 3 | 25 | 576 | 151 | 714 | 2.3 | 21.1 |
| Washington | 35 | 1 | 66 | 46 | 1 | 47 | 47 | 2 | 45 | 33 | 0 | 31 | 42 | 0 | 29 | 207 | 218 | 421 | 1.9 | 51.8 |
| West Virginia | 40 | 1 | 26 | 43 | 3 | 31 | 41 | 0 | 27 | 36 | 2 | 24 | 26 | 1 | 28 | 193 | 136 | 322 | 3.6 | 42.2 |
| Wisconsin | 72 | 1 | 61 | 79 | 6 | 62 | 99 | 0 | 94 | 98 | 11 | 96 | 116 | 3 | 74 | 485 | 380 | 853 | 4.3 | 45.6 |
| Wyoming | 1 | 0 | 11 | 0 | 1 | 15 | 4 | 0 | 9 | 5 | 0 | 18 | 2 | 0 | 8 | 13 | 61 | 73 | 7.7 | 83.6 |
| U. S. Territories and Possessions | 149 | 23 | 6 | 123 | 21 | 3 | 32 | 4 | 11 | 34 | 2 | 6 | 32 | 4 | 18 | 424 | 44 | 414 | 12.7 | 10.6 |
| Totals | 5,179 | 368 | | 5,362 | 367 | | 5,208 | 317 | | 5,226 | 351 | | 5,191 | 433 | | | | | | |
| Examined | 5,547 | | | 5,729 | | | 5,525 | | | 5,577 | | | 5,624 | | | 28,002 | | | | |
| Reciprocity and Endorsement | | 2,222 | | | 2,413 | | | 2,365 | | | 2,217 | | | 1,871 | | | 11,088 | | | |
| Registered | 7,401 | | | 7,775 | | | 7,573 | | | 7,443 | | | 7,062 | | | | | 37,254 | | |
| Percentage Failed in Examination | 6.6 | | | 6.4 | | | 5.7 | | | 6.3 | | | 7.7 | | | | | | 6.6 | |
| Percentage Licensed by Reciprocity and Endorsement | 30.0 | | | 31.0 | | | 31.2 | | | 29.8 | | | 26.5 | | | | | | | 29.8 |

In table 8 will be noted the total number of graduates of osteopathic colleges and those institutions which since December, 1928, have been classified as unapproved, who were licensed with or without examination in 1932. Ten states licensed 187 graduates of other than approved medical schools. Seventy were graduates of unapproved medical schools and 117 were osteopaths. As will be noted, these 117 osteopaths were registered in California, Colorado, Connecticut, Illinois, Massachusetts, Texas, Washington and Wisconsin. In this connection the following facts are of interest.

tificate, his method of practice is not restricted. Fifty-six were granted such certificates during 1932.

In Colorado, osteopaths are admitted to the examination for a license to practice medicine. They have no separate board. The statute of Colorado is silent with respect to the scope of practice authorized by a license issued to an osteopathic applicant. Applicants, apparently, are issued licenses to practice medicine generally.

The Connecticut statute provides that any registered osteopath may practice either medicine or surgery, or both as the case may be, after passing a satisfactory examination before the medical examining board.

The Illinois Department of Registration and Education was delegated by one of the circuit courts to examine an osteopath in certain medical subjects and granted him a license to practice medicine and surgery.

The Massachusetts statute, by definition, includes osteopathy in the practice of medicine but does not differentiate the type of license issued to an osteopathic applicant. The medical practice act requires that any applicant for a license to practice medicine must be in possession of a degree of doctor of medicine, or its equivalent, from a legally chartered medical school that gives a full four-year course of instruction of not less than thirty-six weeks in each year.

The statutes of Texas provide for the issuing of a license to practice medicine only. So far as the statutes indicate, the osteopaths are not restricted in their field of practice. The medical practice act requires that the applicant be a graduate of a reputable school whose entrance requirements and course of instruction are as high as those adopted by the better class of medical schools and whose course of instruction embraces not less than four terms of eight months each.

Two types of osteopathic licenses are issued in Washington: (1) to practice osteopathy and (2) to practice osteopathy and surgery. Those desiring the privilege of practicing osteopathy and surgery are so examined by a committee of osteopathic examiners under the jurisdiction of the department of licenses.

In Wisconsin there is one licensing board. A license issued to osteopathic candidates authorizes them to practice osteopathy and surgery.

The sixty-nine graduates of unapproved schools were licensed in four states. Delaware and Florida each

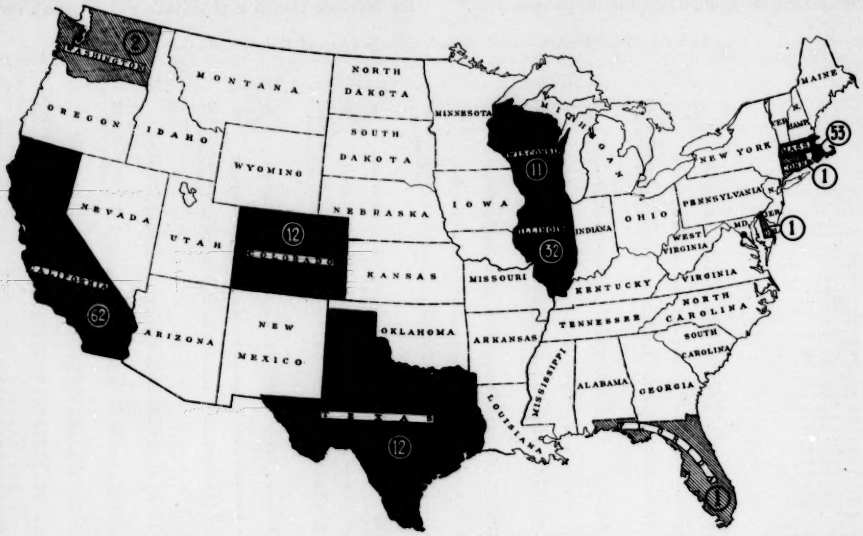


Chart 2.—States licensing other than graduates of approved medical schools during 1932. The states in black licensed more than 10 such candidates. The slanted lines indicate those licensing fewer than 10 graduates.

TABLE 5.—*Registration by State Boards—1904-1932*

| Year | All Candidates Examined: Examined | Passed | Percentage Failed | Registered Without Written Examination | Total Registered |
|---|---|---|---|---|---|
| 1904 | 7,039 | 5,676 | 19.4 | 999 | 6,675 |
| 1905 | 7,178 | 5,688 | 20.8 | 394 | 6,082 |
| 1906 | 8,035 | 6,368 | 20.7 | 1,499 | 7,867 |
| 1907 | 7,274 | 5,726 | 21.3 | 1,427 | 7,153 |
| 1908 | 7,773 | 6,087 | 21.7 | 1,280 | 7,367 |
| 1909 | 7,290 | 5,860 | 19.6 | 1,572 | 7,232 |
| 1910 | 7,005 | 5,713 | 18.4 | 1,640 | 7,353 |
| 1911 | 6,963 | 5,581 | 19.8 | 1,243 | 6,824 |
| 1912 | 6,880 | 5,467 | 20.5 | 1,271 | 6,738 |
| 1913 | 6,447 | 5,248 | 18.6 | 1,291 | 6,539 |
| 1914 | 5,573 | 4,373 | 21.5 | 1,437 | 5,810 |
| 1915 | 5,318 | 4,491 | 15.6 | 1,393 | 5,884 |
| 1916 | 4,854 | 4,127 | 15.0 | 1,350 | 5,477 |
| 1917 | 4,741 | 4,072 | 14.1 | 1,359 | 5,431 |
| 1918 | 3,643 | 3,160 | 13.3 | 1,045 | 4,205 |
| 1919 | 4,749 | 4,073 | 14.2 | 2,541 | 6,614 |
| 1920 | 4,793 | 4,059 | 15.3 | 2,553 | 6,612 |
| 1921 | 4,814 | 4,218 | 12.4 | 2,176 | 6,394 |
| 1922 | 4,012 | 3,520 | 12.3 | 2,057 | 5,577 |
| 1923 | 4,712 | 4,013 | 14.8 | 2,396 | 6,409 |
| 1924 | 5,374 | 4,738 | 11.8 | 1,903 | 6,641 |
| 1925 | 5,960 | 5,458 | 9.2 | 1,838 | 7,276 |
| 1926 | 5,819 | 5,353 | 8.0 | 1,928 | 7,281 |
| 1927 | 5,467 | 5,080 | 7.1 | 2,169 | 7,249 |
| 1928 | 5,547 | 5,179 | 6.6 | 2,222 | 7,401 |
| 1929 | 5,729 | 5,362 | 6.4 | 2,413 | 7,775 |
| 1930 | 5,525 | 5,208 | 5.7 | 2,365 | 7,573 |
| 1931 | 5,577 | 5,226 | 6.3 | 2,217 | 7,443 |
| 1932 | 5,024 | 5,191 | 7.7 | 1,871 | 7,062 |

TABLE 6.—*Source of Physicians Licensed—1917-1932*

| Year | Graduates of Approved Schools: Number | Per Cent | Others: Number | Per Cent | Totals |
|---|---|---|---|---|---|
| 1917 | 4,365 | 80.4 | 1,066 | 19.6 | 5,431 |
| 1918 | 3,149 | 74.9 | 1,056 | 25.1 | 4,205 |
| 1919 | 5,258 | 79.5 | 1,356 | 20.5 | 6,614 |
| 1920 | 5,200 | 79.6 | 1,352 | 20.4 | 6,612 |
| 1921 | 5,063 | 79.2 | 1,331 | 20.8 | 6,394 |
| 1922 | 4,505 | 80.8 | 1,072 | 19.2 | 5,577 |
| 1923 | 5,189 | 81.0 | 1,220 | 19.0 | 6,409 |
| 1924 | 5,671 | 85.4 | 970 | 14.6 | 6,641 |
| 1925 | 6,292 | 86.5 | 984 | 13.5 | 7,276 |
| 1926 | 6,418 | 88.1 | 863 | 11.9 | 7,281 |
| 1927 | 6,406 | 88.4 | 843 | 11.6 | 7,249 |
| 1928 | 6,583 | 88.9 | 818 | 11.1 | 7,401 |
| 1929 | 6,995 | 90.0 | 780 | 10.0 | 7,775 |
| 1930 | 7,002 | 92.5 | 571 | 7.5 | 7,573 |
| 1931 | 6,924 | 93.0 | 519 | 7.0 | 7,443 |
| 1932 | 6,626 | 93.8 | 436 | 6.2 | 7,062 |

licensed one. In the Florida case the applicant had taken postgraduate work. Illinois recognizes a low grade school which is not in good standing with other state boards. The Massachusetts law has already been described.

These data are illustrated in chart 2. Those states which licensed more than ten such individuals are indicated in black, those licensing fewer than ten by slanted lines.

California, Connecticut, Massachusetts, Washington and Wisconsin have laws which, in the interest of public policy, should be amended. In Colorado, Illinois and Texas the state board of medical examiners is vested with discretionary power which could be more vigilantly exercised.

TABLE 7.—*Other Than Graduates of Approved Schools Licensed—1926-1932*

| | 1926 | | 1927 | | 1928 | | 1929 | | 1930 | | 1931 | | 1932 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Examination | Reciprocity and Endorsement | Examination | Reciprocity and Endorsement | Examination | Reciprocity and Endorsement | Examination | Reciprocity and Endorsement | Examination | Reciprocity and Endorsement | Examination | Reciprocity and Endorsement | Examination | Reciprocity and Endorsement | Totals |
| Alabama | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Arizona | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Arkansas | 9 | 1 | 2 | 0 | 6 | 1 | 31 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 53 |
| California | 47 | 2 | 88 | 8 | 97 | 2 | 94 | 4 | 58 | 2 | 58 | 5 | 56 | 8 | 529 |
| Colorado | 44 | 1 | 38 | 4 | 23 | 3 | 10 | 1 | 16 | 2 | 10 | 0 | 12 | 0 | 164 |
| Connecticut | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 1 | 0 | 7 |
| Delaware | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| Dist. Columbia | 1 | 2 | 0 | 0 | 1 | 3 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 11 |
| Florida | 3 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 9 |
| Georgia | 0 | 1 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Idaho | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Illinois | 40 | 0 | 40 | 0 | 30 | 2 | 35 | 0 | 25 | 2 | 33 | 0 | 32 | 0 | 239 |
| Indiana | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Iowa | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 3 |
| Kansas | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| Kentucky | 1 | 0 | 0 | 1 | 3 | 0 | 2 | 2 | 4 | 0 | 0 | 1 | 1 | 0 | 15 |
| Louisiana | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Maine | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| Maryland | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 6 |
| Massachusetts | 55 | 0 | 39 | 0 | 58 | 0 | 52 | 0 | 82 | 0 | 44 | 0 | 55 | 0 | 385 |
| Michigan | 1 | 2 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 |
| Minnesota | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mississippi | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 |
| Missouri | 0 | 0 | 1 | 1 | 0 | 2 | 2 | 9 | 0 | 3 | 0 | 0 | 1 | 1 | 17 |
| Montana | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nebraska | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Nevada | 0 | 1 | 1 | 2 | 1 | 2 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 10 |
| New Hampshire | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| New Jersey | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 6 |
| New Mexico | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 5 |
| New York | 0 | 0 | 1 | 1 | 1 | 0 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 9 |
| North Carolina | 1 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 7 |
| North Dakota | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Ohio | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| Oklahoma | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 7 |
| Oregon | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 4 |
| Pennsylvania | 3 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 |
| Rhode Island | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 1 | 0 | 0 | 6 |
| South Carolina | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| South Dakota | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Tennessee | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 |
| Texas | 4 | 30 | 6 | 19 | 4 | 34 | 10 | 40 | 0 | 56 | 5 | 31 | 3 | 11 | 253 |
| Utah | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vermont | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Virginia | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Washington | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 5 |
| West Virginia | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| Wisconsin | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 1 | 3 | 9 | 20 |
| Wyoming | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 4 |
| U. S. Terr. and Possessions | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 6 |
| Totals | 215 | 52 | 231 | 47 | 232 | 62 | 245 | 71 | 193 | 78 | 160 | 56 | 167 | 33 | 1,842 |
| | 267 | | 278 | | 294 | | 316 | | 271 | | 216 | | 200 | | |

STUDENTS FROM FOREIGN MEDICAL FACULTIES

In THE JOURNAL, Aug. 27, 1932, were published figures showing the standing during the five-year period 1927-1931 of the graduates of each of the faculties of medicine outside the United States and Canada from which five or more graduates had been admitted to the licensing examinations in this country. A similar tabulation for all candidates has been made of the results for 1932.

Table 9 presents the figures for the past year, and for the preceding five years, for each of those universities having five or more examined in 1932. It is interesting to note that Edinburgh had as many of its graduates examined in this country last year as in the preceding five years and that the failures have increased from 0 to 15 per cent.

Because of the recent migration of large numbers of American students to European universities it has seemed desirable to study the performance of the graduates of these schools before our state boards of medical examiners. This record is given in table 10.

These students do not enjoy equal privileges with the natives of those countries in which they are studying,

TABLE 8.—*Licenses to Practice Medicine and/or Surgery Issued to Other Than Graduates of Approved Medical Schools—1932*

| | Graduates of | | | | |
|---|---|---|---|---|---|
| | Osteopathic Schools | | Unapproved Medical Schools | | |
| States | Examination | Reciprocity and Endorsement | Examination | Reciprocity and Endorsement | Totals |
| California | 56 | 6 | 0 | 0 | 62 |
| Colorado | 12 | 0 | 0 | 0 | 12 |
| Connecticut | 1 | 0 | 0 | 0 | 1 |
| Delaware | 0 | 0 | 0 | 1 | 1 |
| Florida | 0 | 0 | 1 | 0 | 1 |
| Illinois | 1 | 0 | 31 | 0 | 32 |
| Massachusetts | 16 | 0 | 37 | 0 | 53 |
| Texas | 3 | 9 | 0 | 0 | 12 |
| Washington | 2 | 0 | 0 | 0 | 2 |
| Wisconsin | 3 | 8 | 0 | 0 | 11 |
| Totals | 94 | 23 | 69 | 1 | 187 |

so that their anticipated return to the United States after graduation constitutes a serious problem for our licensing boards and for the medical profession. On the initiative of the Council, a number of informal conferences were held, participated in by the Association of American Medical Colleges, the National Board of Medical Examiners, the New York State Board of Regents, the Federation of State Medical Boards of the United States and this Council, resulting in the adoption by the Federation of the following resolution:

1. That no American student matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to any state medical licensing examination, who does not, before beginning such medical study, secure from a state board of medical examiners, or other competent state authority, a certificate endorsed by the Association of American Medical Colleges or the Council on Medical Education and Hospitals of the American Medical Association, showing that he has met the premedical educational requirements prescribed by the aforementioned associations.

TABLE 9.—*Foreign Medical Graduates*

| | 1927-1931 Inclusive | | 1932 | |
|---|---|---|---|---|
| | Number Examined | Percentage Failed | Number Examined | Percentage Failed |
| Universität Wien | 65 | 33.8 | 12 | 25.0 |
| Deutsche Universität, Prague | 16 | 31.3 | 6 | 66.7 |
| Université de Paris | 21 | 33.3 | 8 | 37.5 |
| Regia Università di Napoli | 176 | 76.7 | 26 | 57.8 |
| Regia Università di Palermo | 34 | 73.5 | 9 | 88.9 |
| Regia Università di Roma | 42 | 57.1 | 13 | 69.2 |
| University of Edinburgh | 20 | 0.0 | 20 | 15.0 |

TABLE 10.—*Graduates of Medical Faculties of Universities in Countries Other Than the United States and Canada—1932*

| Marginal Number | NAME OF COLLEGE | 1 Alabama | 2 California | 3 Connecticut | 4 Dist. Columbia | 5 Florida | 6 Illinois | 7 Indiana | 8 Kentucky | 9 Louisiana | 10 Maine | 11 Maryland | 12 Massachusetts | 13 Michigan | 14 Minnesota | 15 New Jersey | 16 New Mexico | 17 New York | 18 Ohio | 19 Pennsylvania | 20 Rhode Island | 21 Texas | 22 Vermont | 23 West Virginia | 24 Wisconsin | 25 U. S. Territories and Possessions | Totals | Examined—Passed | Examined—Failed | Percentage of Failures | No. States Examined in | Marginal Number |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | P F | | | | | | |
| | AUSTRIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | Karl-Franzens-Universität, Graz | | 0 1 | | | | | | | | | | | | | | | 1 2 | | | | | | | | | 4 | 1 | 3 | 75.0 | 2 | 1 |
| 2 | Leopold-Franzens-Universität, Innsbruck | | | | | | | | | | | | | | | | | | 0 1 | | | | | | | | 1 | 0 | 1 | 100.0 | 1 | 2 |
| 3 | Universität Wien | | 2 1 | | | | | | | | | | | | | | | 6 2 | | | | | 1 0 | | | | 12 | 9 | 3 | 25.0 | 3 | 3 |
| | BELGIUM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Université Catholique de Louvain | | | | | | | | | | | | | | | | | 1 1 | | | | | | | | | 2 | 1 | 1 | 50.0 | 1 | 4 |
| | CHINA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Pennsylvania Medical School, Shanghai | | | | | | | | | | | | | | | | | | | | | | | | | 1 0 | 1 | 1 | 0 | 0.0 | 1 | 5 |
| | COLOMBIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Universidad de Cartagena | | | | | | | | | | | | | | | 1 0 | | | | | | | | | | | 1 | 1 | 0 | 0.0 | 1 | 6 |
| | CUBA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Universidad de la Habana | | | | | 1 0 | | | | | | 1 1 | | 1 0 | | | | | | | | | | | | | 4 | 3 | 1 | 25.0 | 3 | 7 |
| | CZECHOSLOVAKIA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Deutsche Universität, Prague | | | | | | | | | | | | 1 1 | | | | | 0 3 | | 1 0 | | | | | | | 6 | 2 | 4 | 66.7 | 3 | 8 |
| 9 | Karlovy University, Prague | | | | | | | | | | | | | | | 1 0 | | 0 1 | | | | | | | | | 2 | 1 | 1 | 50.0 | 2 | 9 |
| 10 | Masarykovy University, Brnè | | | | | | | | | | | | | | | | | 0 1 | | | | | | | | | 1 | 0 | 1 | 100.0 | 1 | 10 |
| | DOMINICAN REPUBLIC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Universidad de Santo Domingo | | | | | | | | | | | 1 1 | | | | | | | | | | | 1 0 | | | | 3 | 2 | 1 | 33.3 | 2 | 11 |
| | ENGLAND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | King's College Hospital Medical School, London | | | | | | | | | | | | | | | | | 2 0 | | | | | | | | | 2 | 2 | 0 | 0.0 | 1 | 12 |
| 13 | Licentiate of the Royal Coll. of Physicians, London, and Member of the Royal Coll. of Surgeons, England | | 1 0 | | | | | | | | | 1 0 | | | | | | | | | | | | | | | 2 | 2 | 0 | 0.0 | 2 | 13 |
| 14 | Middlesex Hospital Medical School, London | | | | | | | | | | | | | | | | | 1 0 | | | | | | | | | 1 | 1 | 0 | 0.0 | 1 | 14 |
| 15 | University of London | | | | | | | | | | | | | | | | | 0 1 | | | | | | | | | 1 | 0 | 1 | 100.0 | 1 | 15 |
| | FRANCE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Université de Bordeaux | | | | | | 1 0 | | | | | | | | | | | | | | | | | | | | 1 | 1 | 0 | 0.0 | 1 | 16 |
| 17 | Université de Lyon | | | | | | | | | | | | | | | | | 1 0 | | | | | | | | | 1 | 1 | 0 | 0.0 | 1 | 17 |
| 18 | Université de Paris | | | | | | | | | 0 1 | | | 1 1 | | | | | 2 1 | | | | 1 0 | | | | 1 0 | 8 | 5 | 3 | 37.5 | 5 | 18 |
| | GERMANY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Albert-Ludwigs-Universität, Freiburg | | | | | | 1 0 | | | | | | | | | | | 0 1 | | | | | | | | | 2 | 1 | 1 | 50.0 | 2 | 19 |
| 20 | Friedrich-Alexanders-Universität, Erlangen | | | | | | | | | | | | | | | | | 0 1 | | | | | | | | | 1 | 0 | 1 | 100.0 | 1 | 20 |
| 21 | Julius-Maximilians-Universität, Würzburg | | | | | | | | | | | | | | | | | | | | | | | | 0 1 | | 1 | 0 | 1 | 100.0 | 1 | 21 |
| 22 | Ludwig-Maximilians-Universität, München | | 1 0 | | | | | | | | | | | | | | | | | | | | | | | | 1 | 0 | 1 | 0.0 | 1 | 22 |
| 23 | Friedrich-Wilhelms-Universität, Berlin | | | | | | | | | | | | | | | | | 0 2 | | | | | | | | | 2 | 0 | 2 | 100.0 | 1 | 23 |
| 24 | Thüringischen Landesuniversität, Jena | | | | | | | | | | 1 0 | | | | | | | 2 1 | | | | | | | | | 4 | 3 | 1 | 25.0 | 2 | 24 |
| 25 | Universität Leipzig | | | | | | | | | | | | | | | | | | | | | | | 1 1 | | | 2 | 1 | 1 | 50.0 | 1 | 25 |
| | GREECE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | National University of Athens | | | | | | | | | | | | | | | | | | 0 1 | | | | | | | | 1 | 0 | 1 | 100.0 | 1 | 26 |
| | HUNGARY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Magyar Királyi Erzsébet Tudományegyetem, Pecs | | | | | | | | | | | | | | | | | 0 1 | 0 1 | | | | | | | | 2 | 0 | 2 | 100.0 | 2 | 27 |
| 28 | Magyar Királyi Ferencz József Tudományegyetem, Szeged | | | | | | | | | | | | | | | | | 0 1 | | | | | | | | | 1 | 0 | 1 | 100.0 | 1 | 28 |
| 29 | Magyar Királyi Pazmány Petrus Tudományegyetem, Budapest | | | | 2 0 | | | | | | | | | | | | | | | | | | | | 1 0 | | 3 | 3 | 0 | 0.0 | 2 | 29 |
| | IRELAND | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Queen's University, Belfast | | 1 0 | | | | | | | | | | | | | | | 1 1 | | | | | | | | | 3 | 2 | 1 | 33.3 | 2 | 30 |
| | ITALY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Regia Università di Bologna | | | | | | | | | | | | | | | | | 0 1 | | | | | | | | | 1 | 0 | 1 | 100.0 | 1 | 31 |
| 32 | Regia Università di Catania | | | | | | | | | | | | | | | | | 1 0 | | | | | | | | | 1 | 1 | 0 | 0.0 | 1 | 32 |
| 33 | Regia Università di Firenze | | | | | | 2 1 | | | | | | | | 1 0 | | | | | | | | | | | | 4 | 3 | 1 | 25.0 | 2 | 33 |
| 34 | Regia Università di Genova | | | | | | | | | | | | | | | | | 1 2 | | | | | | | | | 3 | 1 | 2 | 66.7 | 1 | 34 |
| 35 | Regia Università di Napoli | 1 0 | | 0 1 | | | 1 2 | 1 0 | | | | | | | | 2 4 | | 4 7 | 0 1 | | 1 0 | 1 0 | | | | 26 | 11 | 15 | 57.8 | 9 | 35 |
| 36 | Regia Università di Palermo | | | | | | | | | | | | | | | 0 1 | | 1 6 | 0 1 | | | | | | | | 9 | 1 | 8 | 88.9 | 3 | 36 |
| 37 | Regia Università di Pavia | | | | | | | | | | | | | | | 0 1 | | | | | | | | | | | 1 | 0 | 1 | 100.0 | 1 | 37 |
| 38 | Regia Università di Roma | | 0 2 | | | | | | | | | 1 1 1 0 | | | | | | 2 6 | | | | | | | | | 13 | 4 | 9 | 69.2 | 4 | 38 |
| | MEXICO | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 39 | Escuela Médico Militär, México, D.F. | | | | | | | | | | | | | | | | 1 0 | | | | | | | | | | 1 | 1 | 0 | 0.0 | 1 | 39 |
| 40 | Universidad Nacional de Guadalajara | | | | | | | | | | | | | | | | | | | | | 1 0 | | | | | 1 | 1 | 0 | 0.0 | 1 | 40 |
| 41 | Universidad Nacional, México, D.F. | | | | | | | | | | | | | | | | | | | | | 1 0 | | | | | 1 | 1 | 0 | 0.0 | 1 | 41 |
| | NORWAY | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 42 | Kongelige Frederiks Universitets, Oslo | | | | | | | | | | | | | 1 0 | | | | | | | | | | | | | 1 | 1 | 0 | 0.0 | 1 | 42 |
| | PHILIPPINE ISLANDS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 43 | University of Santo Tomas, Manila | | | | | | | | | | | | | | | | | | | 1 0 | | | | | | 0 1 | 2 | 1 | 1 | 50.0 | 2 | 43 |

| | | |

## BASIC SCIENCE BOARDS

STATISTICS FOR 1932

Basic science boards have been established and are in operation in six states; namely, Arkansas, Connecticut, Minnesota, Nebraska, Washington, Wisconsin and the District of Columbia. Legislation creating basic science boards in Arizona and Oregon has recently been passed. The greatest degree of usefulness for these boards exists in those states which have multiple examining boards. The object of these boards has been to provide a means of insuring that all candidates seeking authority to care for sick and injured people shall first possess a reasonable knowledge of the sciences fundamental to the healing art as demonstrated by an examination in those subjects before they can enter the professional examination. The subjects in which examinations are conducted are listed in table 1. They include anatomy, pathology and physiology by all boards, chemistry by five boards, bacteriology and hygiene by four boards, and diagnosis by two.

TABLE 1.—*Subjects of Examinations*

| State | Examinations Required in | | | | | | |
|---|---|---|---|---|---|---|---|
| | Anatomy | Bacteriology | Chemistry | Diagnosis | Hygiene | Pathology | Physiology |
| Arkansas | + | + | + | .. | .. | + | + |
| Connecticut | + | .. | .. | + | + | + | + |
| District of Columbia | + | + | + | .. | .. | + | + |
| Minnesota | + | + | + | .. | .. | + | + |
| Nebraska | + | + | + | .. | + | + | + |
| Washington | + | .. | + | .. | + | + | + |
| Wisconsin | + | .. | .. | + | .. | + | + |

Altogether, 735 candidates were examined by the seven boards in 1932, of whom 634 passed and 101, or 13.7 per cent, failed. As indicated in table 2, of this number 657 were physicians or medical students, of whom 590 passed and 67, 10.2 per cent, failed. There were 45 osteopaths, of whom 33 passed and 12, 26.7 per cent, failed. There were also 23 chiropractors, of whom 5 passed and 18, or 78.3 per cent, failed. Minnesota examined 150, the largest number, and also had the highest number of failures. Of osteopaths, Connecticut examined the highest number and Wisconsin examined 10.

TABLE 2.—*Applicants Examined—1932*

| State | Year Enacted | Physicians or Medical Students | | Osteopaths | | Chiropractors | | Unclassified | | Total Examined | Passed | Failed | Percentage Failed |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | P | F | P | F | P | F | P | F | | | | |
| Arkansas | 1929 | 51 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 54 | 53 | 1 | 1.9 |
| Connecticut | 1925 | 118 | 1 | 17 | 4 | 0 | 4 | 0 | 1 | 145 | 135 | 10 | 6.9 |
| Dist. of Columbia | 1929 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 45 | 39 | 6 | 13.3 |
| Minnesota | 1927 | 104 | 28 | 5 | 6 | 1 | 5 | 1 | 0 | 150 | 111 | 39 | 26.0 |
| Nebraska | 1927 | 86 | 21 | 1 | 1 | 0 | 0 | 1 | 2 | 112 | 88 | 24 | 21.4 |
| Washington | 1927 | 68 | 4 | 0 | 1 | 3 | 7 | 0 | 1 | 84 | 71 | 13 | 15.5 |
| Wisconsin | 1925 | 124 | 6 | 10 | 0 | 1 | 2 | 2 | 0 | 145 | 137 | 8 | 5.5 |
| Totals—Examined | | 657 | | 45 | | 23 | | 10 | | 735 | | | |
| Totals—Passed | | 590 | | 33 | | 5 | | 6 | | ... | 634 | | |
| Totals—Failed | | 67 | | 12 | | 18 | | 4 | | ... | ... | 101 | |
| Percentage Failed | | 10.2 | | 26.7 | | 78.3 | | 40.0 | | ... | ... | .. | 13.7 |

The number of certificates granted by examination and reciprocity and endorsement are listed in table 3. Wisconsin accepted the greatest number from other states, 72, of whom 62 were physicians and 10 osteopaths. All boards except that of Washington have established reciprocal relations. The basic science board of Wisconsin issues reciprocity certificates to medical and osteopathic reciprocity candidates from states without basic science legislation on verification from the medical board that the applicant's credentials have been accepted, which accounts for the large number licensed by endorsement.

Table 4 shows the number of candidates examined and certified from 1927 to 1932. In 1932, 10.2 per cent of physicians failed, as compared with 43.6 per cent for other practitioners.

In 1928, when five boards were functioning, there were 646 physicians examined, of whom 60, or 9.3 per cent, failed, and 59 nonmedical practitioners, of whom 28, 47.5 per cent, failed. In 1932, with seven boards functioning, 657 physicians and 78 other practitioners were examined, of whom 10.2 and 43.6 per cent, respectively, failed. During the six-year period a total of 3,641 physicians were examined, of whom 10.5 per cent failed and 410 other practitioners, of whom 51.5 per cent failed. During this period 450 physicians were certified without examination, while only 16 nonmedical practitioners were granted this privilege. Altogether, 3,707 physicians and 215 others were certified. From the high percentage of failures in the nonmedical group, it seems apparent that the enforcement of basic science laws affects most seriously this group.

TABLE 3.—*Certificates Issued by Examination, Reciprocity and Endorsement—1932*

| State | Examination | | | | | Reciprocity and Endorsement | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Physicians or Med. Students | Osteopaths | Chiropractors | Unclassified | Totals | Physicians | Osteopaths | Chiropractors | Unclassified | Totals | Registered |
| Arkansas | 51 | 0 | 0 | 2 | 53 | 0 | 0 | 0 | 0 | 0 | 53 |
| Connecticut | 118 | 17 | 0 | 0 | 135 | 0 | 0 | 0 | 0 | 0 | 135 |
| District of Columbia | 39 | 0 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 39 |
| Minnesota | 104 | 5 | 1 | 1 | 111 | 26 | 1 | 0 | 0 | 27 | 138 |
| Nebraska | 86 | 1 | 0 | 1 | 88 | 8 | 0 | 0 | 0 | 8 | 96 |
| Washington | 68 | 0 | 3 | 0 | 71 | 0 | 0 | 0 | 0 | 0 | 71 |
| Wisconsin | 124 | 10 | 1 | 2 | 137 | 62 | 10 | 0 | 0 | 72 | 209 |
| Totals | 590 | 33 | 5 | 6 | 634 | 96 | 11 | 0 | 0 | 107 | 741 |

TABLE 4.—*Total Candidates—1927-1932*

| Year | No. of Boards | Physicians | | | | | | Other Practitioners | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Examination | | | | Endorsement | Total Certified | Examination | | | | Endorsement | Total Certified |
| | | Examined | Passed | Failed | Percentage Failed | | | Examined | Passed | Failed | Percentage Failed | | |
| 1927 | 5 | 305 | 279 | 26 | 8.5 | 26 | 305 | 22 | 15 | 7 | 31.8 | 1 | 16 |
| 1928 | 5 | 646 | 586 | 60 | 9.3 | 19 | 605 | 59 | 31 | 28 | 47.5 | 0 | 31 |
| 1929 | 7 | 668 | 610 | 58 | 8.7 | 75 | 685 | 66 | 31 | 35 | 53.0 | 0 | 31 |
| 1930 | 7 | 685 | 606 | 79 | 11.5 | 104 | 710 | 78 | 30 | 48 | 61.5 | 4 | 34 |
| 1931 | 7 | 680 | 586 | 94 | 13.8 | 130 | 716 | 107 | 48 | 59 | 55.1 | 0 | 48 |
| 1932 | 7 | 657 | 590 | 67 | 10.2 | 96 | 686 | 78 | 44 | 34 | 43.6 | 11 | 55 |
| Totals | | 3,641 | 3,257 | 384 | 10.5 | 450 | 3,707 | 410 | 199 | 211 | 51.5 | 16 | 215 |

## NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners was organized in 1915. Its certificate is recognized by the licensing boards of the following forty-two states and three territories:

| | | | |
|---|---|---|---|
| Alabama | Kansas | New Hampshire | Rhode Island |
| Arizona | Kentucky | New Jersey | South Carolina |
| California | Maine | New Mexico | South Dakota |
| Canal Zone | Maryland | New York | Tennessee |
| Colorado | Massachusetts | North Carolina | Utah |
| Connecticut | Minnesota | North Dakota | Vermont |
| Delaware | Mississippi | Ohio | Virginia |
| Georgia | Missouri | Oklahoma | Washington |
| Hawaii | Montana | Oregon | West Virginia |
| Idaho | Nebraska | Pennsylvania | Wisconsin |
| Illinois | Nevada | Puerto Rico | Wyoming |
| Iowa | | | |

Candidates for licensure in Connecticut, Illinois, Maine, Montana, Rhode Island and Wyoming are given an oral examination by the state board. In the case of Montana, Nebraska and Ohio the answer papers written by the applicant in his National Board examination are forwarded under seal to the state board for review and approval. The Maryland and North Carolina boards ask all applicants, whether diplomates of the National Board or otherwise, to present themselves for a personal interview. Applicants for registration in Pennsylvania must have had a rotating internship in accordance with the regulations adopted for all applicants seeking licensure in that state. Several boards, including New York, Pennsylvania and South Carolina, reserve the privilege of reviewing each candidate's credentials. California requires a year of residence in some state after a candidate becomes a diplomate. The examinations of the National Board are also accepted by the basic science boards of Connecticut, Minnesota, Nebraska, Wisconsin and the District of Columbia.

The certificate of the National Board is accepted by the United States Army as a scientific qualification for entrance to the medical corps. It is also accepted in part by the United States Public Health Service. Its diplomates are admitted to the final examinations given by the examining boards of England, Ireland, Scotland and Spain.

Since 1922 the board has conducted its examinations in three parts, as follows: Part I, a written examination in anatomy, including histology and embryology; physiology; physiologic chemistry; pathology; bacteriology, including immunology; pharmacology, and materia medica. Part II, a written examination in medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene and medical jurisprudence. Part III, a clinical and practical examination in (*a*) clinical medicine, including medical pathology, medical anatomy, applied physiology, applied pharmacology, clinical chemistry, clinical microscopy and dermatology; (*b*) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (*c*) obstetrics and gynecology; (*d*) public health, including sanitary bacteriology and the communicable diseases.

Four examinations were held in parts I and II during 1932, of whom 1,307 and 732, respectively, were examined, of whom 847 passed part I and 89, or 9.5 per cent, failed. In part II, 674 passed and 58, or 7.9 per cent, failed. In part I, 371 took an incomplete examination.

The results of the examinations in part III, which were held in several of twenty subsidiary centers in different parts of the country, since 1922 are presented in the following tabulation. In 1932, 549 were examined, as compared with 437 in 1931. Of those examined in part III in 1932, 5.1 per cent failed, while in 1931, 4.1 per cent failed. During the eleven year period 3,069 candidates were examined, of whom 2,919 were granted certificates and 149, or 4.9 per cent, failed.

In computing percentages in this table, the figures given in the column "Incomplete" were not included. An incomplete examination is arranged for candidates taking part I at the end of their second medical year in schools whose third-year curriculums include courses in one or two subjects of this part. The subjects thus postponed may be taken at any examination period after the candidate has completed them in his medical school. Also listed under "Incomplete" are those who wish to spend some additional time on one or two subjects. Final credit is not determined until the candidates have taken the remaining subjects.

*Examinations in Part III*

| Examinations of | Total Examined | Passed | Incomplete | Failed | Percentage Failed |
|---|---|---|---|---|---|
| 1922 | 28 | 28 | 0 | 0 | 0.0 |
| 1923 | 76 | 75 | 0 | 1 | 1.3 |
| 1924 | 120 | 114 | 0 | 6 | 5.0 |
| 1925 | 217 | 206 | 0 | 11 | 5.1 |
| 1926 | 255 | 243 | 0 | 12 | 4.7 |
| 1927 | 294 | 272 | 0 | 22 | 7.5 |
| 1928 | 322 | 306 | 0 | 16 | 5.0 |
| 1929 | 352 | 336 | 1 | 15 | 4.3 |
| 1930 | 419 | 399 | 0 | 20 | 4.8 |
| 1931 | 437 | 419 | 0 | 18 | 4.1 |
| 1932 | 549 | 521 | 0 | 28 | 5.1 |
| Totals | 3,069 | 2,919 | 1 | 149 | 4.9 |

The figures in the following table represent the number of individuals examined during any one year. The classification as passed or failed, in cases in which more than one examination had been taken in a given year, was based on the results of the last examination taken during the year in question. For example, if in 1932 a student passed part I but failed in part II, he is listed as having failed in 1932. Taking this into consideration, there were 2,341 individuals who took the National Board examinations during 1932, as compared with 2,218 in 1931. Only 525 were examined in 1922. The percentage of failures in 1932 was 6.9.

During the ten year period, altogether 15,609 individuals were examined, of whom 11,931 passed and 1,558, or 11.6 per cent, failed.

Diplomates licensed without further examination in the United States increased from 2 in 1917 to 325 in 1932, 1,799 having been so licensed since the board was created.

*Parts I, II and III, Excluding Duplications*

| | Total Examined | Passed | Incomplete | Failed | Percentage Failed |
|---|---|---|---|---|---|
| 1922 | 525 | 381 | 58 | 86 | 18.4 |
| 1923 | 775 | 594 | 79 | 102 | 14.7 |
| 1924 | 978 | 756 | 69 | 153 | 16.8 |
| 1925 | 1,167 | 915 | 50 | 202 | 18.1 |
| 1926 | 1,161 | 930 | 105 | 126 | 11.9 |
| 1927 | 1,248 | 947 | 142 | 159 | 14.4 |
| 1928 | 1,430 | 1,101 | 211 | 118 | 9.7 |
| 1929 | 1,723 | 1,280 | 319 | 124 | 8.8 |
| 1930 | 2,043 | 1,546 | 322 | 175 | 10.2 |
| 1931 | 2,218 | 1,632 | 410 | 176 | 9.7 |
| 1932 | 2,341 | 1,849 | 353 | 137 | 6.9 |
| Totals | 15,609 | 11,931 | 2,120 | 1,558 | 11.6 |

As a result of the steadily increasing number of applicants for admission to medical schools abroad, and in cooperation with other agencies interested in this problem, the National Board in February of this year passed the following resolution:

That no student, either American or European, matriculating in a European medical school subsequent to the academic year 1932-1933 will be admitted to the examination of the National Board of Medical Examiners who does not present satisfactory evidence of premedical education equivalent to the requirements of the Association of American Medical Colleges and the Council on Medical Education and Hospitals of the American Medical Association, and graduate from a European medical school after a medical course of at least four academic years, and obtain a license to practice medicine in the country in which the medical school from which he graduated is located.

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SATURDAY, APRIL 22, 1933

## VITAMIN C

In a recent contribution to the current literature on vitamins, Hassan and Basili [1] have shown that, contrary to accepted views, the juice of fresh Egyptian limes is as potent a source of the antiscorbutic factor as is the juice of lemons or oranges. This observation recalls the fact that lime juice was early regarded as an effective prophylactic and cure for scurvy. Indeed, in 1795, every vessel in the British navy was required to carry a supply of lime juice as a protection against this disease, which broke out regularly among the sailors on long sea voyages. However, after the advent of the vitamin hypothesis, when widespread assays for the antiscorbutic factor were carried out on natural food materials, it was observed that lime juice was definitely inferior to other citrus fruits in this respect. This is now explained by the observation of the Cairo investigators that the loss of vitamin C occurs in lime juice at a much faster rate than in lemon juice. In the older studies imported limes were used and the juice was kept for feeding purposes over a period of two months or more, thus permitting the destruction of the antiscorbutic factor.

The foregoing observations call attention to the rapid advance in knowledge of the chemical nature of vitamin C that has taken place within the last two years. From concentrated lemon juice, crystalline material has been obtained which exerts a powerful antiscorbutic action in experimental animals. In one laboratory, equally potent crystals have been prepared from the cortex of the suprarenal glands. Chemical examination of these active crystalline preparations indicates that they are identical compounds with an empirical formula of $C_6H_8O_6$. According to Karrer and his co-workers,[2] this effective material is an organic acid with two ketone groups, easily susceptible to oxidation, and shows an absorption band at 265 millimicrons when dissolved in water. This substance, now called ascorbic acid, showed no loss in antiscorbutic activity after being recrystallized as many as five times. It is significant, furthermore, that those natural sources of vitamin C which have been analyzed show the presence of ascorbic acid.

Although the ascorbic acid from widely different sources appears to be identical chemically, and in spite of the fact that from 0.5 to 1.0 mg. daily will protect an experimental animal from scurvy, there has been some hesitation in identifying it with vitamin C. In an effort to obtain evidence on this point, Harris and Ray [3] have assayed the cortical tissue of bovine suprarenal glands for vitamin C and compared the results with those obtained with orange juice, at the same time comparing the two materials on the basis of content of ascorbic acid. The fresh cortex of the suprarenals has proved to be the most potent source of the antiscorbutic factor thus far investigated, being three times more potent than orange juice, long recognized as rich in this factor. As the comparison on the basis of the bio-assay corresponds to the relative amounts of ascorbic acid determined in these sources and isolated from them, it appears that vitamin C is identical with ascorbic acid or is a substance closely similar to it in distribution and in chemical nature.

The current investigations on vitamin C have a twofold interest: they have progressed to the point at which chemical identification of this dietary essential is imminent, thus satisfying one of the goals of biochemical research. The studies also have served to stimulate an interest in the physiologic chemistry of the suprarenal cortex. The concentration of ascorbic acid in this organ in scorbutic animals is diminished and at the same time there occurs a definite hypertrophy of the gland, apparently a compensatory reaction. It appears that the chemical studies of vitamin C will soon reach the point at which the localization of this food factor in the suprarenal gland and the mechanism of its protection against scurvy can be explained.

1. Hassan, A., and Basili, R.: Biochem. J. **26:** 1846, 1932.
2. Karrer, P., Salomon, H., Schöpf, K., and Morf, R.: Biochem. Ztschr. **258:** 4, 1933.
3. Harris, L. J., and Ray, S. N.: Biochem. J. **26:** 2067, 1932.

## INSULIN AND ACUTE INFECTIONS

Students of diabetes are familiar with the fact that the onset of diabetic glycosuria often follows a history of acute infection in the patient. The bibliography of the subject is far too extensive to be reviewed here. A few typical quotations will serve to stress the salient features. For example, Geyelin [1] stated that he had seen eight cases in which the diabetes arose within five weeks after an acute infection. White,[2] in her study of a hundred diabetic children, found that only 2 per cent did not have a history of acute infections preceding the onset of the diabetes. It seems to be well accepted that diabetes, even in a fulminating

1. Geyelin, H. R., in Cecil, R. L.: Text Book of Medicine, ed. 2, Philadelphia, W. B. Saunders Company, 1930.
2. White, Priscilla: The Potential Diabetic Child, J. A. M. A. **88:** 170 (Jan. 15) 1927.

form, can follow acute infectious diseases such as typhoid, scarlet fever, cholera, influenza, diphtheria, tonsillitis, malaria, syphilis and rheumatic fever.

A new significance to such observations has been given by the recent researches of Williams and Dick [3] at the John McCormick Institute for Infectious Diseases, Chicago. They found that a temporary glycosuria occurs in acute infections and contagious diseases as well as in experimental infections; nearly half of the patients with acute infectious diseases had glycosuria when given sufficient dextrose. Likewise, in experimental infections in animals a similar transient glycosuria has been produced. This is accompanied by an increase in the height of the blood sugar concentration during fasting, and by alterations in the blood sugar curves as shown by the dextrose tolerance tests in animals. Feeding experiments in human patients suffering from acute infections demonstrated a true lowered carbohydrate dextrose tolerance. It may last several months.

A feature of this study is the demonstration that under the conditions outlined the sugar tolerance may be greatly improved by the administration of insulin. This suggests that the toxemia of the infections interferes with the action or the production of insulin or with both these factors. By supplying exogenous insulin, which restores the carbohydrate tolerance, it would appear that lack of production is probable. According to the Chicago investigators, the action of insulin in improving the carbohydrate tolerance in acute infections is analogous to its similar action in diabetes mellitus. In many instances the severity of the disease and the degree of reduction of tolerance could be correlated, and in patients having one contagious disease following another there was marked reduction of tolerance. This suggests, they add, a probable important factor in the etiology of diabetes. The recovery of tolerance following injury by infection is explained by Williams and Dick as immunity to the infecting organism and by regeneration of the islets of Langerhans. It has been demonstrated that the latter fact occurs in diabetes in which tolerance has been improved. Much thinking in this field will be clarified by the suggestion that in infectious diseases there is often an injury to the islets of Langerhans with a lessened production of insulin.

In contrast with the effects of shortage of insulin, it may be helpful to present the picture of the effects that excess of insulin may bring about. The hypoglycemia ensuing under these circumstances is now well known. Hyperinsulinism is no longer a rarity in medical literature. A striking feature, however, is the definite and characteristic insult to the myocardium for which insulin hypoglycemia undoubtedly is responsible. According to studies at the Michael Reese Hospital in Chicago by Soskin, Katz, Strouse and Rubinfeld,[4] the detrimental cardiac effects of insulin, when they occur, are due for the most part to the removal of dextrose so vitally needed by the myocardium. As they announce, if it may be supposed (and there is reason to believe that it is so) that the damaged myocardium stores dextrose only with difficulty, then the lowering of the blood sugar by insulin will decrease or remove the heart's source of dextrose supply without at the same time stocking up the myocardium with its carbohydrate needs for the interim. This would be comparable to a rapid lowering of the blood sugar level in a normal animal. The antagonistic actions of insulin and dextrose on the heart are probably, therefore, more apparent than real. In other words, the deleterious action of insulin on the heart is probably not due to a direct toxic action on the myocardium but is rather related to the supply of carbohydrate that is readily available to this organ.

3. Williams, J. L., and Dick, G. F.: Decreased Dextrose Tolerance in Acute Infectious Diseases, Arch. Int. Med. **50**: 801 (Dec.) 1932.

4. Soskin, Samuel; Katz, L. N.; Strouse, Solomon, and Rubinfeld, S. H.: Treatment of Elderly Diabetic Patients with Cardiovascular Disease, Arch. Int. Med. **51**: 122 (Jan.) 1933.

## THE INTESTINE AS AN EXCRETORY ORGAN

The excretory system of the body is of immense importance to the welfare of the organism. In man and the higher animals there are no effective devices for storing the end-products of metabolism—the waste of the body. Various structures and functions are evidently destined to promote the elimination of waste products promptly and completely, regardless of whether they are gaseous or nongaseous in character. Students are proverbially reminded that the skin, lungs and kidneys participate in the work of excretion, which involves primarily carbon dioxide, water, and nitrogenous and inorganic waste. Experience unfortunately shows that the renal structures not infrequently fail to perform adequately. This pathologic situation calls for medical resourcefulness. Diuretics are used to promote the excretory action of the kidneys. In former days much effort was directed under such circumstances to enhance the eliminatory function of the skin. Perspiration was promoted by the use of specific diaphoretics as well as by physical methods that tend to increase sweating. Whether such procedures are of value in eliminating "toxins," particularly in uremic conditions, seems rather doubtful today. Sweating is without question an important factor in heat regulation; that is, the elimination of waste heat. Various blood constituents, such as urea, find their way into the sweat; but the actual quantities, even in profuse perspiration, have seemed to be too small to relieve the kidneys to any noteworthy extent.

Recently physiologists have begun to realize the importance of the bowel as an organ of excretion. By this is not meant the removal of materials that have failed to be digested and absorbed. The feces also

contain substances secreted into the lumen of the intestine for excretory purposes. This applies notably to iron, calcium and magnesium as well as to certain foreign elements. The large intestine may be regarded as the principal channel for the excretion of insoluble substances that cannot easily be passed out by the kidneys. In former days, purgation was a common procedure in routine practice. Williams and Dick [1] have pointed out that the excretion of water by the intestine has long been recognized as a useful therapeutic procedure, but little emphasis has been placed on the substances excreted with the liquid. The action of the saline cathartics is generally regarded as being due to the large amount of liquid that is abstracted from the blood through the intestinal mucosa by the hypertonic solution.

When kidney function is inadequate, the work of the bowel may be far more important, according to recent reports.[1] Studies at the John McCormick Memorial Institute for Infectious Diseases give a background for the assumption of some "vicarious elimination" through the bowel. According to Williams and Dick, appreciable amounts of the nonprotein nitrogen metabolites are eliminated in the stools by purgation. The higher the concentration of nonprotein nitrogen in the blood, the higher is the concentration in the liquid feces. The therapeutic efficacy of vigorous catharsis and purging is supported by experimental evidence. Sometimes the concentration of nitrogen in the purgation stools was greater than that in the blood. In any event, new interest has become centered in the possible value of the saline cathartics and hydragogues in the treatment of chronic nephritis and chronic myocarditis.

## SEASONAL VARIATIONS IN GROWTH

The importance that the phenomena of growth assume in the consideration of child welfare is emphasized by the elaborate deliberations of the recent White House Conference on Child Health and Protection dealing with this subject.[1] Growth and development are essential—probably the most essential—functions of the young. It is imperative, therefore, to establish dependable standards by which these processes can be gaged. This is far more difficult than may appear at first consideration. Gross increase in weight, in stature or in form are by no means always simultaneous or identical. Many features enter into the conception of growth. They deserve independent evaluation; as Donaldson [2] wrote many years ago, "The measure of the whole man is neither the number of pounds that he can lift, nor the facts that he can discover, nor the influence that he can exert upon his fellows, nor yet the age to which he can attain, but something of all these and what they stand for, taken together."

One of the most commonly used procedures to measure growth and to establish "norms" or averages that may be of help in judging the well being of children consists in ascertaining the rate of gain in body weight during well defined intervals of adolescence. Data secured in this manner have led many investigators to conclude that there are what may be termed "cycles of growth" or periods of unusual acceleration followed by relative retardation in gains of weight.[3] Among such alleged cycles are so-called seasonal variations of growth. The available facts were reviewed in detail a few years ago by Nylin.[4] According to a government report [4] it is the consensus of informed opinion that growth proceeds at maximal rates during the late summer and autumn, continues at considerably reduced rates during the winter, and falls to minimal rates in the spring and early summer. This typical fluctuation has been observed in Danish children in Copenhagen, in Swedish children in Stockholm, in Scotch children in Aberdeen, in German children in Berlin, and in American children in Boston and New York. It is of interest to note, also, that growth in weight is accelerated in the fall (April, May and June) and greatly reduced in the spring (October, November and December) in children of English stock in Melbourne. Such facts lead one to conclude that the cyclic manifestation of physiologic activity is associated in some as yet unexplained manner with seasonal changes.

Under the supervision of the medical officers of the United States Public Health Service, approximately 2,500 native-born white children attending the elementary schools of Hagerstown, Md., were weighed monthly during the school years from September, 1923, to May, 1928. A study of the statistics thus secured has led Palmer [4] to the conclusion that maximal rates of average growth in weight are observed during the fall months, intermediate rates during the winter, and minimal rates during the spring. The average rate of growth during the summer period is approximately equal to the rates observed during February and March. The same cyclic changes are observed in both sexes and for each yearly age group from the sixth through the fourteenth year. These observations are in agreement, with few exceptions, with the previous work on the subject. During the sixth and seventh years there is no consistent difference between the growth rates of boys and girls. During the eighth and ninth years, boys apparently grow at slightly greater rates than girls. In the spring of the tenth year, the rates for girls become greater than the rates for boys and remain higher for each subdivision of the year

1. Williams, J. L., and Dick, G. F.: The Excretion of Nonprotein Nitrogen Substances by the Intestine, J. A. M. A. **100**: 484 (Feb. 18) 1933.

1. Growth and Development of the Child, in four volumes, under the editorial direction of Kenneth D. Blackfan, M.D., New York, Century Company, 1932.

2. Donaldson, H. H.: Growth of the Brain, New York, Charles Scribner's Sons, 1903.

3. Robbins, Brady, Hogan, Jackson and Greene: Growth, New Haven, Conn., Yale University Press, 1928.

4. Nylin, Gustav: Periodical Variations in Growth, Standard Metabolism and Oxygen Capacity of the Blood in Children, Acta med. Scandinav., supp. 31, 1929. Added data are given by Palmer, C. E.: Seasonal Variation of Average Growth in Weight of Elementary School Children, Pub. Health Rep. **48**: 211 (March 3) 1933.

until the fall of the fourteenth year, when the rates for boys become greater and remain so through the fifteenth year. Comparison of the seasonal curve of monthly growth rates with the seasonal curve of incidence of sickness indicates that there is no concomitant variation between the two. It would indeed be interesting—and probably immensely important—to ascertain the factors that are involved in regular seasonal fluctuations. Nylin believed that he observed periodicities in basal metabolism as well as in growth. He assumed that both the growth and the metabolic phenomena are closely associated with the incidence of short waves in the sunlight, but one must hesitate to draw definite conclusions as to the causal relationships that may exist between these various factors.

## Current Comment

### TEN STATES WITH LOW STANDARDS OF MEDICAL LICENSURE

Doctors, lawyers, pharmacists and members of other professions are licensed in most instances for the protection of the public. Thus the dangers of unskilful ministrations by untrained, and therefore unqualified, persons are in part controlled. The public takes it for granted that practitioners licensed by the state are reliable and may be consulted with reasonable security. Twenty-one years ago, by a merger of two preexisting groups, the Federation of State Medical Boards of the United States was formed. Its purpose was to bring order out of the chaos then prevailing in medical licensure and to enforce reasonable standards of preliminary and professional education for all who would be legally authorized to practice medicine. Though much has been accomplished, much remains to be done before that goal is obtained. The figures reported by the various state boards elsewhere in this issue show that ten states issued 187 licenses to others than graduates of approved medical schools in 1932. California heads the list with sixty-two, because, in that state, a separate osteopathic board confers a license to practice as "physician and surgeon" identical with that issued by the medical board. Massachusetts has the unenviable distinction of having licensed fifty-three, of whom sixteen are osteopaths and thirty-seven graduates of unapproved schools. In Massachusetts the law requires that any graduate of a legally chartered four-year school be admitted to the examination. Illinois ranks third, with thirty-two unqualified licentiates. Although the department of registration and education has power to exclude from the examination graduates of unsatisfactory schools, it has for some years admitted the graduates of one school which is not approved by the Council on Medical Education and Hospitals and to which other state boards refuse recognition. As long as these ten states open their doors to those who are unable to satisfy minimal requirements as to professional training, the public will suffer at the hands of ignorant and unskilled practitioners.

### TYROSINOSIS—AN ERROR OF METABOLISM

Clinical medicine for many years has been familiar with peculiarities in the metabolism of certain persons. The anomalies do not interfere ordinarily with the routine of life and are discovered as a rule through the chance of some examination of the involved person for other reasons. Pentosuria, cystinuria and alkaptonuria are illustrations of such conditions that have aptly been described as inborn errors of metabolism. Their incidence not infrequently betrays a presumptive hereditary background of origin. Cystinuria and alkaptonuria are definitely associated with a failure of two amino-acids, cystine and tyrosine, respectively, to be completely disintegrated in the metabolism as they ordinarily are in normal persons. The amino-acids are, of course, derived from either the proteins ingested or those of endogenous source liberated by the tissues of the body. In alkaptonuria the degradation of tyrosine (hydroxyphenylalanine) stops at a stage represented by homogentisic acid (dihydroxyphenyl acetic acid), which normally is further broken down. The clinical manifestations of alkaptonuria, notably the darkening of the urine on exposure to air, have been recognized for more than a century, having been described by Marcet in 1823. Marshall isolated in 1887 what is now known as homogentisic acid, the substrate of the chromogenic changes that darken the urine. A somewhat comparable though evidently distinct anomaly has recently been described by Grace Medes[1] of the University of Minnesota. It likewise involves tyrosine metabolism and has been designated as tyrosinosis. The anomaly was discovered through the peculiar reducing power of the urine that was being examined in routine diagnosis. The patient excreted dihydroxyphenylalanine; he was free from abnormal pigmentation. The endogenous tyrosine metabolism of this patient resulted in a daily excretion of about 1.6 Gm. of hydroxyphenylpyruvic acid together with small quantities of other tyrosine derivatives. Homogentisic acid, when fed, did not reappear in the urine; hence it may be assumed that the anomalous "block" in the degradation of tyrosine occurs before the stage of homogentisic acid formation. Tyrosine derivatives representing earlier steps in the oxidative breakdown tend to be eliminated rather than catabolized. According to Medes, the two errors of tyrosine metabolism now known, alkaptonuria and tyrosinosis, both involve blocks in the oxidation of tyrosine, but at different stages. In tyrosinosis the block occurs following formation of *p*-hydroxyphenylpyruvic acid and consists essentially in the inability of the patient to oxidize the *p*-monohydroxy compound to the 2:5-dihydroxy derivative. He can, however, open the ring previously oxidized in the 2:5 position. In alkaptonuria, the person is able to bring about 2:5 oxidation but cannot further metabolize this compound. On the other hand, he can oxidize the benzene ring by some other route.

1. Medes, Grace: A New Error of Tyrosine Metabolism: Tyrosinosis; the Intermediary Metabolism of Tyrosine and Phenylalanine, Biochem. J. **26**: 917, 1932.

# Association News

## MEDICAL BROADCAST FOR THE WEEK

### American Medical Association Health Talks

The American Medical Association broadcasts on Tuesday and Thursday from 9:15 to 9:20 a. m., central standard time, over Station WBBM (770 kilocycles, or 389.4 meters). The subjects for the week are as follows:

April 25. Posture.
April 27. Our Vitamins.

There is also a fifteen minute talk sponsored by the Association on Saturday morning from 9:45 to 10 o'clock over Station WBBM.

The subject for the week is as follows:

April 29. Scientific Experiment and Medicine.

## ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

*Twenty-Ninth Annual Meeting, held in Chicago, Feb. 13 and 14, 1933*

*(Continued from page 1183)*

DR. J. S. MCLESTER, Birmingham, Ala., in the Chair

### COUNCIL ON MEDICAL EDUCATION AND HOSPITALS

FEBRUARY 14—MORNING

### *MEDICAL ECONOMICS*

#### The Separation of Research from Teaching

DR. WILLIAM T. COUGHLIN, St. Louis: The report of the Committee on the Costs of Medical Care considers all that pertains to the cost of medical care in general, but there is a noticeable absence of data concerning the initial cost of making a physician. Why the omission? An estimate of the present-day annual cost per student is given by the Commission on Medical Education as $1,183. The fees for tuition alone vary from $150 to $700, and, so far as I can find out, they have not become lower because of the depression. In sixty years the time required to be spent in preparation for a degree has increased more than 500 per cent and the increase in the cost is probably as great. If it be allowed that the cost in money paid out is approximately $10,000, and I make it much lower than is usually given, and to this is added the student's potential earning power while in school—say, $10,000 more—this gives as his investment $20,000. If one makes any statement regarding the high cost of medical education in the presence of medical educators, one is quickly informed that the student's education costs the school much more per student than the amount the student is charged. Just how true this is, I am not qualified to say. I do not believe that any one here is.

Is it any more the duty of the state to educate its physicians than it is to educate its teachers, engineers, lawyers and clergymen? There has been a lot of loose talk about the duty of the state to conserve the health of its people. Most of this has been by laymen or physicians in name only. There has been a lot of argument to prove that it is the duty of the state to furnish every one a job. But how much of such talk is by interested individuals who hope to obtain personal benefit from such paternalism!

Why does an ordinary medical school exist? The only good reason is to teach those who wish to study medicine in order that they may live by that profession and render such service as may be rendered by a good general practitioner. There are extraordinary schools, and there is a need for them. These schools should have as their prime object the advancement of medical knowledge. This is an entirely different field from that of medical practice. Is it a fact that some of the expense of what is really graduate teaching has been charged to the account of the medical student? My belief is that more money is being paid out for research than would make up the difference between the total budget and the amount received as students' fees. And all this is being charged to the debt of the student, whereas it is not his debt at all. The student is paying for at least as much as he gets. I do not believe that every man allowed to engage in research should first be obliged to study medicine, and no more am I convinced that the time spent by a student in the research atmosphere of the laboratory increases in direct proportion his ability or his qualification as a good physician. If a research man can, by his achievement, bring distinction to the institution with which he is connected, he will become a drawing card, especially if the institution is provided with a good advertising department. Such a man is of almost as much value to the institution as a winning football team. But this man must continue in production, otherwise his value will diminish quickly. Since his greatest value to the institution consists in his ability to produce output which will further advertise the institution, is it reasonable to suppose that his teaching or his administrative duties will be performed so faithfully?

I have been approached by candidates for inferior positions in my own department. One of them, 29 years of age, almost as soon as I had met him, told me that he had written forty papers and published twenty! He is doing what passes for research! Now, this being so, what is its effect on the men whom we thus appoint to any position? The answer is evident. We have been making our appointments and promotions for more than twenty years with ability in research as the main consideration. How would it be to try a change? If training in research or research itself is not necessary in the training of the medical student, should we not then rather concentrate our efforts on furnishing him that which is essential to qualify as a physician? This is our first duty. If you are overjoyed with our results under the present system, compare our record, in ordinary appendicitis or in obstetric mortality with that of twenty years ago. Would it be possible to appoint a man to be head of a department on the basis of his teaching and administrative ability alone? And wouldn't it be better for the student to have as chief an able teacher rather than one able in research alone? Is not a great deal of the hospitalization of patients done for minor illnesses and by younger men, improperly trained and fearful of overlooking something? If the proper value is put on teaching, trained teachers will soon begin to appear.

What percentage of the student's money is given for matter taught him should be known, what percentage goes for research from which he derives no direct benefit, and how much of it is given to research from which he derives benefit. Of all that is so abundantly poured out as research can the cost and the value, article by article, be estimated? Can one find out how many persons actually read more than the title? An investigation and an appraisal of our subject ought to be made. It ought to be possible, in dollars and cents, to show just what is being given for teaching, for administration and for research.

Who shall do it? Only a cold-blooded, not personally interested, investigating body could arrive at any correct and worth-while conclusions. To accept the report of an institution in its own behalf will not do. I believe that this is a duty for the Council on Medical Education and Hospitals, made urgently necessary by the majority report of the Committee on the Costs of Medical Care.

Research should not be carried on by the undergraduate school. The medical student derives no more benefit from research than any other citizen and, therefore, its expense should not be charged to his account. The student derives most benefit from his teachers. In considering qualification for a teaching post, it is customary to lay most stress on research accomplishment. This discourages teaching ability. A research man can do his best only when free at any and all hours, and for this reason alone, if for none other, research should be separated from teaching.

DISCUSSION

DR. D. J. DAVIS, Chicago: The most characteristic feature of a modern university is its productive or creative type of scholarship. An educational institution without research is a trade school, sterile and hopeless. This trade school type is what medical education has been trying to get away from for forty years. No more striking example of this could be given in all educational history than the change from the old proprietary medical college in America, where no research was done, to the present-day university medical college invigorated and

enlivened by investigation. It is not likely that we shall go back a half century. What should be the relation of research and teaching within the walls of the institution? It is possible to conceive of separate research and pure teaching departments in a college. There may be some justification for this when special funds are given for a particular purpose or to do some particular piece of work. But even then the teaching department would suffer unless permeated with research and supported by men of the thinking type. Any organization tending to separate the research man from the teaching man is most unfortunate. The productive or research type is so clearly superior in his field in the long run that the pure teacher or transmitter will develop an inferiority complex fatal to progress. The research and the teaching types of mind are not easily separated. All men have to some degree the qualities of both types. The free intermingling of both types is needed, so that each may acquire and absorb from the other the characteristics desirable for progress. The research type should pay more attention to the principles of transmitting information, while the transmitting type should exert himself to do some research, at least. There is a tendency for them to drift apart. Each needs the other, and they should be brought together in every possible way.

Several years ago at Illinois, a curriculum designed to promote cooperation of research and teaching was arranged. We have a hospital with 350 beds, all charity, and all selected cases. These are used both for teaching and for study, some for one and some for the other, but most of the cases serve well for both purposes. In the college there are no research departments as such. All departments carry on both types of work, and both men and work are intermingled as a rule in such a way that they cannot be segregated. We assume that the best students in the class will make the most desirable material for teaching and research. Occasionally a useful man may rise from the ranks of the mediocre or even from the lowest group. Through cooperation with the graduate school of the university, students with the B.S. degree from the upper third are permitted to register for a limited amount of graduate work in lieu of their regular required work. These courses are research in character and taken with the consent of the department for whose regular work graduate work is substituted. Thus it is possible to receive an M.D. and an M.S. at about the same time. Often by accepting an assistantship one goes on as a candidate for the Ph.D. degree. Another thing is done by the graduate faculty. When necessary, it has waived the entrance requirement of a B.S. degree for registration in the graduate school to the extent of permitting students to register for one unit of graduate work in the last semester of the second year. This permits them to start this work before they have completed their work in the fundamental sciences and before they have entered the work of the clinical years. Such measures tend to emphasize this type of work. They direct the attention of both students and faculty, and especially the younger faculty men, to this type of work.

With several of the conclusions of the author I am unable to agree. The spirit of investigation should permeate the undergraduate college. All faculty members should be active, if possible, and at least be interested in research. The students, especially the better ones, should be furnished an opportunity to learn, at least, the methods of research and be trained to appreciate the spirit and attitude of research men. The medical student owes everything he learns to discoveries in the field of medicine, most of them made within the last fifty years or less. Money devoted to investigation in any field is conceded to be the best investment any state has ever made. Medical discoveries cannot be evaluated in dollars and cents. Let one estimate in cash, if one can, even to the student, the value of the contributions of Banting in diabetes, of Murphy and Minot in pernicious anemia, of the Dicks in scarlet fever, of Birch in hemophilia, of Ivy in gastric ulcer, to name only a few recent American discoveries, all made by persons doing research and teaching. Such work is going on every day in our medical colleges. These persons who make such discoveries should not be segregated. They should be brought into intimate relations with both the faculty and the students. The best teachers are those who are making these discoveries. It is clear why, in seeking men to occupy university positions, stress is laid on research ability. It is the only way to obtain outstanding men. Practically all research men desire to do some teaching. During these times the costs should be reduced. But elimination of research from the medical colleges should be about the last thing attempted in any depression program.

### Investigations and Conclusions of the Committee on the Costs of Medical Care

DR. LEWELLYS F. BARKER, Baltimore: This article appeared in full in THE JOURNAL, March 25, page 868.

### Basic Considerations in Minority Report of Committee on the Costs of Medical Care

ALPHONSE M. SCHWITALLA, S.J., St. Louis: This article appeared in full in THE JOURNAL, March 25, page 863.

### Prepayment Plans for Hospital Care

DR. R. G. LELAND, Chicago: This article appeared in full in THE JOURNAL, March 25, page 870.

DISCUSSION

DR. J. H. J. UPHAM, Columbus, Ohio: The medical profession is a conservative body, necessarily so from bitter experience. Times without number, wonderful discoveries have been announced and panaceas exploited which too often when tested in the greatest of laboratories, general medical practice, have proved disappointing and illusory. Thus the profession has acquired the habit of caution toward the trying out of new suggestions before adopting them in a wholesale way. As a matter of fact, every one of the suggestions of the majority report is being tried out somewhere and some of them in many places in this country today, and their activities are being observed and their results evaluated. The group or clinic plan is in operation in many communities. I do not believe that physicians are prepared yet to endorse or condem it. I know of a few groups, chiefly in small communities, that appear to be operating satisfactorily. In these, close relations have been maintained with the surrounding practitioners. These groups are not supported by taxation. I know of some groups in which reverse conditions prevail. These are more frequently found in larger centers and are often the source of discontent among the local profession. Practitioners complain of patients lost to them if once they are referred to the clinic, and of the methods of advertising by many clinics. If the city is large enough and one clinic has proved successful, others will surely be organized and competition will follow, the newer ones following the usual business rule of offering more for less money, with the usual effects on the quality of service. Lay invasion of this field has already occurred. Companies organized and controlled by laymen, actuated entirely by the hope of commercial profit, operated by physicians on fixed salaries or commissions, are springing up over the country. They are taking advantage of the publicity given this report and will doubtless insinuate that they are acting in accord with its recommendation. With these dangers in mind, I do not see how the medical profession can endorse this recommendation for general application. The second recommendation has also been tried out in many places with varying success. Theoretically it appears commendable, but there are great practical difficulties. Immunization of children, for instance, to be generally effective, should be placed on the same plane as vaccination against smallpox; in other words, made compulsory. As a member of the Public Policy and Legislative Committee of Ohio for twenty years, with many conflicts with antivaccinationists, I can foresee what that would entail! There is need for further education of the public, of the profession, of the administrative health officers and of the social workers, before the recommendation can be successfully worked out. The third recommendation, of sickness insurance, has much to commend it provided the right of free choice of physicians is maintained. The great difficulty is that this is not acceptable to the insurance companies. Inevitably, when organizations have been organized with cash benefits and free choice of physicians, other competing companies offer medical attention at a lower rate. The economy is at the expense of the physicians and poorer service is the result. This recommendation would more nearly meet the approval of the medical profession if it included the right of free choice of physicians and the language changed to read that "service on an individual fee basis should be insisted on." Dr. Barker states that, "despite the bad patterns established at first in Europe, no

country that has resorted to the principle of insurance has given it up." I think it may be said that this is not because of but in spite of the desires of the practitioners, who are the best judge of the efficacy of the various schemes. It is interesting to note his admission that these measures have not lessened the mortality and have increased the incidence of disease and lengthened the periods of disability. These have been repeatedly urged as arguments against the insurance plans. To my mind the greatest value of the work of the Committee on the Costs of Medical Care will result from the gathering of the great amount of material pertaining to medical practice, health conditions and methods and from drawing the attention of the medical profession to the necessity of studying the facts to the end that solutions may be eventually worked out. It is to be regretted that socialistic individuals, and some sociological workers have seized on the committee's findings as grounds for wholesale criticism of the medical profession.

MICHAEL M. DAVIS, PH.D., Chicago: It was shocking to appreciate that in an average year a population as large as that of the city of Cleveland are faced with sickness bills on their family budgets amounting to one third or one half of their income, and to appreciate that this condition, which in the average will crush a family's finances, is not the fault of the physician or the hospital or the patient, but the fault of a situation for which no single individual or group is responsible. It was important to find that the level of incomes of the profession created before the depression a serious problem, faced by physicians and hospitals, and all of these and other facts and needs which could be recited led to the demand for carefully planned action. One passes naturally to a word concerning the plans referred to in Dr. Leland's paper, relating to provision against the cost of hospital care. As I listened to his paper I was somewhat perturbed by the growing sense of impending doom coming on any one who started a scheme of hospital insurance. I question the reliability of the approach. Mention was made almost entirely of commercialized schemes. Neither the majority report, the minority report, the American Hospital Association, nor any reputable medical or nonprofessional group that I know of favors commercialized schemes at all. No mention was made of the fact that there are in this country at present at least sixteen cities in some of which noncommercial schemes are in operation, and in some, including the larger cities, hospital schemes are being planned. It does not seem to me an entirely scientific procedure to lay before us supposititious evils arising among plans which are started on principles which most of us here would admit are at least worth considering. A positive program is needed in dealing with the problems of the costs of hospital care. What better method is there for fighting commercialized plans which we all wish to propose than by dealing with the needs on which those plans feed? They feed on the needs of the public which existed before the depression, they feed on the needs of the hospitals which are more acute now because of the depression. What significance is there in saying that these plans might lead to the substitution of paying patients in ward beds, and thus violating the principle that the beds were given for charity? It seems important that the approach to this problem from authoritative sources shall look toward at least encouraging desirable professional and noncommercial forms of action. I take it that we look forward to attempts to solve the problem of the high cost of hospitalization. Certainly a layman like myself, in close touch with the hospital world, wishes to see such experiments move forward, wishes to see professional groups who furnish service, administrative groups such as those who manage hospitals, and the public who pay the bills, work together in a solution of these problems.

DR. NATHANIEL W. FAXON, Rochester, N. Y.: We are confronted by the following conditions: First, medical knowledge has outrun the distribution of medical service. Second, the cost of medical care is rising, which is justifiable because the medical care is of a better nature. Third, people find it increasingly difficult to pay for medical care. There is, therefore, more charity now than there has been. Fourth, the income of hospitals from patients, endowments and gifts has lessened. Fifth, there are increased demands on governmental hospitals. We want to achieve, first, adequate medical service to all; second, reasonable remuneration to doctors; third, freedom of choice of doctor and hospital; fourth, distribution of costs so as to minimize charity to patients and stabilize incomes of doctors and hospitals. How are we going to achieve what we want? I speak only regarding that portion of the problem that deals with hospitals. It is well to remember that hospital outpatient departments, which are essentially group medicine and the adaptation of joint practice, were developed mainly as the result of the endeavor and desire of physicians. They are not the result of immediate economic conditions but are more in the nature of an evolutionary development. The welfare of the hospital is identical with the welfare of its staff, of the physicians of the community and of the community itself. The use or misuse of hospitals lies in the hands of physicians. Dr. Leland has pointed out many evils to be avoided, none of which are necessarily inherently included in group insurance for hospital care. They can be avoided. They are timely warnings but are not conclusions. The American Hospital Association has declared that it "supports the principle of group hospital insurance as a probable economic solution of the distribution of the costs of hospital care." I should like to enumerate certain fundamental principles that should guide the formation of any such plan: First, the public, the doctor and the hospital are equally concerned. Any plan that does not recognize the rights of each group will be unsatisfactory. Second, it should be a cooperative, not a competitive, plan. That is, all hospitals of good standing and all doctors should be included. There should be free choice. Third, the objective is adequate medical care, not profits. Therefore, control must be retained by those interested in that objective. Fourth, it should be based on group insurance rather than on individual insurance, in order to avoid unfavorable selection of risk. Its organization will have to vary with local conditions, as a rule. Fifth, it probably should be carried out by some organization separate from the hospital, with a representative directing board consisting of doctors, representatives of hospitals, social organizations and the public. They should seek legal advice. They may hire a commercial company to promote it, under their direction. I see nothing inherently wrong in an organization of that sort hiring an expert to do its work. Sixth, there is certainly demand for some plan. In Europe this resulted in the present insurance laws, made without direction or interest (except to oppose) of doctors and hospitals. Shall we not learn by their experience and try to shape our destinies, and, if legislation is to come, to direct it?

DR. CHARLES B. WRIGHT, Minneapolis: I represent the average man practicing medicine throughout the country. The matter of medical costs is a problem which I would not attempt to cope with. The government has been trying to fix costs of wheat and everything else, and so far it has been a total failure. I question very much whether we shouldn't be devoting more of our time to discussions of efficient medical service rather than so much time to the cost of it. Fifteen years ago the insurance companies had a maximum fee for the care of an insurance case, and even laws in many states were passed to provide a maximum cost of the care of the patient. Today, the better insurance companies, recognizing the fallacies of that, have opened the bars and provided unlimited service, and what they ask is efficient care and that the man should be returned as quickly as possible to his employment. So I should prefer to talk about efficiency. It is interesting to see such a group as this discussing these economic problems, which we should have been discussing ten years ago. It is interesting to discuss the future trends, but the great problem today is the care of these unemployed people. The medical profession is taking care of them. My income has decreased 50 per cent in the last year, and I am as busy as I ever was. I want it distinctly understood that the physicians of this country are giving service whenever they are asked, as a general rule, to people who are unemployed. The care of the indigent, of course, is another problem, and we know today that no insurance scheme will be of any value to these unemployed or indigent people; that is, so far as a state or municipal scheme is concerned. In the first place, they themselves cannot pay money for insurance, and, in the second place, employers will not pay it for them. A man who was before 1929 a great organizer of business told me that many conservative companies and industries had well established plans for the medical care of their disabled men, but they have all broken down in this period of distress and they have had to junk all of those

plans. A great deal has been said about the trend to centralization of medicine. The trend today is decentralization. And if economic conditions continue, our institutions supported by private philanthropy and by the cities are going to be junked and closed up. In my city we had to do our best to keep open an outpatient service maintained for these people, because the city funds are exhausted and they have overreached their bond issues. No problem of voluntary insurance will ever touch these poor people. That is something for people who are employed. These liability companies are cracking up today because of the demands that have been made on them by applicants for medical and hospitalization privileges, because of unemployment, looking back to some supposed injury which they had previous to their discharge. I want to emphasize that the tendency is to decentralization. Our great medical clinics in groups, not financed soundly, are going to crack if this emergency continues. As one who has practiced medicine for thirty years, as an individual practitioner, I feel that the people today who have a doctor in whom they have confidence are not demanding any different scheme than they have at present.

DR. NATHANIEL W. FAXON, Rochester, N. Y.: The doctor stated his opinions. I should like to ask what his plan is. What is he going to do about it?

DR. CHARLES B. WRIGHT, Minneapolis: In my own community of 500,000, if they are unemployed and have no money, the plan is to send them to the hospitals that are built for that purpose. So far their capacity has been sufficient. We have investigated and could find no one who demanded immediate hospitalization. We have had no claims for hospitalization that could not be taken care of. Our semipublic or philanthropic hospitals are today taking care of a large load of indigent people. Don't forget that we are trying to do this with the present scheme.

DR. MORRIS FISHBEIN, Chicago: Dr. Leland has traveled throughout the United States; he has investigated many schemes of hospital insurance, schemes having to do with corporate practice and contract practice; he has read carefully all the reports of the Committee on the Costs of Medical Care, twenty-six in number; he has visited many medical schools; he has had sent to him from physicians who are the membership of the American Medical Association (and there are 100,000 of them affiliated and associated with hospitals) reports on the actual workings of the schemes as they affect both the medical profession and the public. I would venture to say that Dr. Leland's knowledge today of hospital insurance schemes, contract schemes and similar schemes in their effects on medical practice is equal to, if it does not surpass that of any other trained mind in that field in the United States. The strange development of Mr. Davis's ideas regarding Dr. Leland's competence is interesting in view of the fact that he opened by saying that we must consider this matter with light and without heat, and must avoid personalities. I have heard that cry throughout the United States as I have discussed the report of the Committee on the Costs of Medical Care with various men supporting the majority report. I have found in my brief experience in this field that for every human action there is a personality behind it, and it is difficult to discuss these things without discussing the records of the men who promote the ideas. I have carefully investigated the bibliographies of the men on the Committee on the Costs of Medical Care, and I have found that nobody came out with a different opinion from that with which he went in. I am particularly interested to hear the new song of many of the men who signed the majority report of the Committee on the Costs of Medical Care, "Let us proceed slowly and experiment and study and investigate." That is the new song. But before the Committee on the Costs of Medical Care met in the New York Academy of Medicine to hear the final report, they employed a publicity agent to put over the report. The American medical profession would not have been disturbed if the Committee on the Costs of Medical Care had done what every other scientific investigator does, offer his results and say, "Here they are: see what you can do with them"; but whenever anybody tries to put over a scheme that concerns the nature of medical practice, the problem is one for the medical profession to take up and handle.

DR. A. B. MAGNUS, Chicago: Four years ago, I visited Moscow, the playground of ultrasocialistic and insurance schemes. I was in Russia several months, and I know the scheme as presented by the majority report is a close neighbor and is following in close proximity the scheme that is presented there. It is a pitiable sight to see. I saw that country where all the physicians are conscripted, where absolutism reigns and compels people to do almost anything in the way of dieting, in the way of walking, that says what they shall read and how they shall rest, and governs their medical care. I didn't have selected agents to lead me, because I knew the language, so I went where I wanted to go. There would be people sitting in the physician's office for a day, in line. The mother who has to leave her family at home has to wait for her turn to get free medical care. After she gets to the doctor in Moscow she pays 50 cents, on the side, to get better attention. If they don't pay for the service, it is not as good. Individualism is entirely abolished. The welfare of the masses is paramount, and the only way to get any kind of care is to bribe the physician. Otherwise the doctor will just look at the tongue, feel of the abdomen, and out you go. Two or three minutes, or five at the most, is what you get. If you hand him 50 cents, or a ruble, he will spend ten minutes with the patient and have him come again, and then the patient will be seen earlier. This is, in brief, the situation in Russia in a nutshell. What one reads here is not a hundredth portion of what the ultrasocialistic insurance schemes would do in the United States.

DR. LEWELLYS F. BARKER, Baltimore: The last speaker knows Russian and was in Russia longer than I was. I was in Russia twenty-five days year before last, and I found a rather different picture. I was in Moscow, Leningrad, down the Volga River, in Odessa, along the Red Sea. I got a very different impression from what has just been heard. I am opposed to Bolshevism, opposed to Sovietism, opposed to the Red idea, but I wish that in parts of our country we had as good care of the women and children from the medical standpoint as they have in Russia. They have done some things that we could do very well to imitate. A professor told me that the medical profession was on the whole pretty well satisfied. I talked with him and his wife very freely, and got a pretty good idea of what is going on there. I have no doubt there are terrible things in certain places. There are in this country. I had to disagree with Dr. Schwitalla about many things, although he was most fair in his presentation. One of the things that I disagree with is the necessity of too much aloofness of the profession from the rest of the world. I think the time has passed when any profession can maintain its aloofness, its priestly situation, in our social and economic system. We have got to adjust ourselves. He said that no pressure from the outside, nothing coercible from the outside, can have any real effect on the advance of medical practice. I cannot agree with that. I think that the discussion that has been aroused will do a vast amount of good, and that we shall look back on the work of the Committee on the Cost of Medical Care as marking an epoch in the history of American medicine.

ALPHONSE M. SCHWITALLA, S.J., St. Louis: The point that Mr. Davis made, that the committee tried to be objective in its findings, is unquestionably true. On the other hand, it should not be forgotten that there was a definite commitment that there would have to be propaganda carried out, not so much for insuring legislation on this point but rather for the purpose of forming the proper mind. I think that was the idea chiefly in the minds of the committee members, that the whole United States should be informed of the findings of the committee. I must say that in all fairness to the committee, and it must not be lost sight of. The American Hospital Association could do no more constructive work than to formulate a set of standards regarding the acceptability of an insurance company for this type of activity. As soon as those standards are formulated, if they are then fine-combed and laid before the groups interested, I think we shall make headway when we have something definite to criticize and study. It is a fallacy, I believe, to say that all groups interested must take a controlling hand in the solving of this problem. I cannot believe for a moment that lay boards should have as much to say about hospitals as the medical men practicing in those hospitals. I do not believe they are competent to judge the real intrinsic soul of the hospital to the same extent to which the medical man is able to judge it. Although it might look like a spirit of fairness to say that the public, the patient, the

medical man and the hospital administrator should have an equal voice, I cannot accept the authority of those three groups on the same level. I cannot see, in this question about group insurance, that the question ought to be gone into on a group plan rather than an individual one. Regarding the financial risk, when one thinks that the risk has to be decreased, one is immediately making the commercial aspects of this matter a controlling thing rather than the medical aspects of it. The approach that Dr. Wright showed is helpful, but I should like to take exception to one remark: He said that the insurance companies are trying to get the men back into normal life as soon as possible. I would not comment on it except for the fact that many people are of the impression that to return a patient to normal family life as soon as possible is the symbol of boom to the hospital. We are trying to judge hospitals by the average days of the patient. It reminds me of other forms of activity. During the war there were constant bickerings between the line officer and the medical corps because the line officer wanted his men back in the trenches, and the medical man knew that the patient was not ready to go back. There are bickerings today between the university health officials and the coaches of the football teams on that point. Many of the universities have minimized the control of the football team by the student health service because the coaches have objected that the medical men on the student health service are keeping the men on their backs too long when they need them for the next game. Men have been on the field when they had no business playing because of their physical condition. I appreciate Dr. Barker's comments. I do not feel, and I hope you will not misunderstand, that the medical man should keep aloof in this sense: that he shall not respond to the stimuli coming from his environment. It is the genotype that determines the way in which the external stimulus is being stimulated by the organism. That is the point I wanted to bring out.

DR. R. G. LELAND, Chicago: As a matter of fact, there are few of the noncommercial hospital schemes in operation in this country today. The most of them, and those which are operated over the largest areas, are commercial. The conclusions that were drawn from these remarks were not ethereal. The original documents can be seen in my office, the contracts and the advertising material and the correspondence, and I have notes of some field studies. Some of these plans actually contemplate the conversion of free bed space into profit-making space. A question which I have asked almost every one who proposes a scheme on a purely ethical basis is, "How are you going to sell it?" And as yet no one has been able to give me a satisfactory answer as to how one is going to sell a perfectly ethical scheme, because group hospitalization depends on large numbers of people. That is one of the premises on which it is based. If it does depend on large numbers, one cannot depend on the individual initiative to come in and buy it. Therefore, these mass production methods need sales force, and if any one can tell me how one can control a sales force selling hospitalization or medical service, I shall be glad to have the information. The medical profession has never opposed any ethical plan for the provision of medical service at a low cost provided it is under the control of the medical profession and it involves standard ethical procedures. I believe that it is possible to formulate some plan which may be an improvement over the plans that have existed in the past. However, I believe that the medical profession should bear in mind always that we have never considered it essential that there be a middleman selling medical and hospital service between the physician or the hospital and the patient, making a profit from the profession and the public.

*(To be continued)*

**Mortality of Burns and Scalds.**—Under the old bath and grease treatment, the average mortality was 39.6 per cent burns and 18.8 per cent scalds. In the early days of the picric acid treatment the mortality was 39.7 per cent burns and 7 per cent scalds, and in the last five years of the picric acid treatment the mortality was 15.5 per cent burns and 7.5 per cent scalds, whereas the adoption of tannic acid in October, 1928, and its systematic use in subsequent years has reduced the mortality to 4 per cent burns and 1.7 per cent scalds.—Mitchiner, P. H.: The Treatment of Burns and Scalds, *Lancet* **1**:238 (Feb. 4) 1933.

# *Medical News*

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

## ALABAMA

**Society News.**—The Calhoun County Medical Society was addressed, March 21, by Drs. Murdock S. Equen, Atlanta, on "Foreign Bodies in Food and Air Passages," and Frank K. Boland, Atlanta, "Differential Diagnosis of Abdominal Tumors." Dr. John D. Durden, Anniston, addressed the society, February 7, on pneumonia.——At a meeting of the Geneva County Medical Society in Geneva, March 14, Drs. Earle F. Moody and Vincent J. Thacker, both of Dothan, discussed intestinal obstruction.

## ARIZONA

**Dr. Truman Appointed State Health Officer.**—Dr. George C. Truman, Mesa, took up the duties of state health officer, April 4, following his appointment by Governor B. B. Moeur, who is also a physician. Dr. Truman, who is 30 years of age, graduated from St. Louis University School of Medicine in 1926.

**Public Health Meeting.**—The sixth annual meeting of the Arizona Public Health Association was held at Tucson, April 17-19, under the presidency of Dr. Alvy N. Crain, Tucson. Speakers included Drs. Frederick T. Foard, Jr., of the U. S. Public Health Service on "Public Health Administration"; Warren F. Fox, El Centro, Calif., "Public Health in Imperial County"; Edwin B. Godfrey, San Bernardino, "Function of a County Health Department," and Karl F. Meyer, Ph.D., of the Hooper Foundation for Medical Research, San Francisco, "Certain Aspects of Undulant Fever." Speakers at other sessions included Drs. Platt W. Covington of the Rockefeller Foundation and Allen K. Krause, Tucson.

## CALIFORNIA

**Epidemic Septic Sore Throat Reportable.**—In accordance with action taken at a meeting of the California Department of Public Health, February 25, epidemic septic sore throat is now reportable. This change was made to distinguish this infection from other forms of septic sore throat.

**Botulism from Home Canned Green Peppers.**—Two cases of botulism were reported in San Luis Obispo County, one of which proved fatal, according to the bulletin of the state health department, March 4. The source was traced to the consumption of home canned green peppers and to other products which contained green peppers in combination with chile sauce or tomatoes, it was stated. The first victim became ill on the night of February 16, suffering from disturbed vision and paralysis of the throat; he died at noon the next day shortly after entering a hospital. His wife became sick, February 18, and, at the time of this report, was still seriously ill.

**Courses for Graduates.**—The University of California will offer summer courses for graduates in medicine, June 5-17. The subjects include general medicine, general surgery, otorhinolaryngology, genito-urinary diseases, pediatrics, circulatory diseases, diseases of the blood-forming organs, diseases of the endocrine glands, including diabetes, diseases of the gastrointestinal tract, laboratory diagnosis, pathology and operative technic. In addition there will be noon lectures held daily and clinicopathologic conferences and round table discussions three evenings each week. There will be no charge for lectures, conferences and round table discussions. Complete details may be obtained from the dean of the medical school in San Francisco.

## COLORADO

**Bill Introduced.**—H. 734 proposes to create a state board of osteopathic examiners, to exercise all the rights and powers and perform all the duties now vested by law in the state board of medical examiners with respect to the practice of the healing art by osteopaths. Licenses issued by the osteopathic board are to authorize osteopathic licentiates to practice the healing art, including the practice of medicine, without restriction.

## CONNECTICUT

**Investigation of Diet for the Poor.**—A committee of three members has been appointed by the Bridgeport Medical Society to investigate the city's dietary standards for the poor. It was stated that the discovery of malnutrition and cases of scurvy among those living on food from the city commissary

led to the investigation. The committee, composed of Drs. James D. Gold, Charles H. Sprague and Edwin B. Weldon, will confer with city welfare and health departments.

**Diagnostic Laboratories.**—Thirty-five laboratories have received the certificate of approval for diagnostic examinations for 1933 from the state health department. Included among these are eight health department, nineteen hospital, four college and three industrial laboratories and one insurance laboratory. Seven of these health department laboratories are also approved for milk tests, as well as three of the hospital laboratories, the insurance laboratory and one of the industrial laboratories.

**Society News.**—The Tri-Medical Society (Norwich, New London and Willimantic) was addressed at Uncas-on-Thames, March 2, by Dr. Gabriel Tucker, Philadelphia, on diagnosis and treatment of diseases of the lungs.——At a meeting of the Hartford Medical Society, March 6, Drs. Walter R. Steiner, Hartford, and Nathan B. Van Etten, New York, discussed the majority and minority reports of the Committee on the Costs of Medical Care, respectively. Dr. William Barclay Terhune, Jr., Stockbridge, Mass., addressed the society, April 3, on "The Psychiatric Approach in General Practice."——The New England Obstetrical and Gynecological Society will hold its spring meeting in Hartford, April 26. The daytime program will be composed almost entirely of clinics, and the speaker of the evening will be Prof. William Lyon Phelps, New Haven.

## DELAWARE

**Society News.**—Dr. George Harlan Wells, Philadelphia, addressed the New Castle County Medical Society, March 21, on "Cause and Treatment of Cardiac Pain." Dr. Harold W. Jones, Philadelphia, spoke before the society, February 21, on "Symptoms in Modern Diagnosis."

**Bill Enacted.**—H. 278 has become a law, amending the narcotic drug act by prohibiting the sale of "cannabis indica, cannabis americana, cannabis sativa, loco weed, Canadian hemp, marajuahana, marajuna, and all allied drugs of the same botanical family," except on the prescription of a licensed physician, dentist or veterinarian.

## FLORIDA

**Campaign Against Malaria.**—Early in March, the Leon County Health Unit began a campaign to eradicate malaria. Inaugurated in Woodville, the work will be extended into other communities of Leon County, including Miccosukee, Chaires, Capitola and Fort Braden, where drainage projects are already under way with the general relief work, newspapers reported, March 24. David B. Lee of the Rockefeller Foundation is engaged in the work, which is being directed by Dr. Leander J. Graves, Tallahassee.

**Board of Trustees for Municipal Hospital.**—The creation of a board of trustees to manage and operate the Tampa Municipal Hospital was recently endorsed in a resolution adopted by the Hillsborough County Medical Association. It was recommended that the board should be self-perpetuating so that vacancies may be filled by the remaining members, the initial board of five members to be named by the mayor. The resolution, according to newspaper reports, has been approved by the medical and surgical staff and the medical advisory board of the hospital. As this change would require an amendment to the city charter, steps will be taken to have a bill introduced and passed at the next session of the legislature, it was stated.

## ILLINOIS

**Society News.**—Dr. Hugh Cabot, Rochester, Minn., addressed the Peoria City Medical Society, April 4, on "Recent Advances in the Treatment of Infection of the Urinary Tract."——Dr. Philip Lewin, Chicago, addressed the Rock Island County Medical Society, March 14, on arthritis.

**Bills Introduced.**—S. 431 proposes to accord physicians, nurses and hospitals treating persons injured through the fault of other persons liens on all rights of action, claims, judgments, compromises or settlements accruing to the injured persons by reason of their injuries. S. 457 and S. 458 propose to create a board of examiners for "the medical practitioners who practice osteopathy" and to regulate the practice of osteopathy. The board is to be authorized to issue two kinds of licenses: (1) licenses to practice osteopathy in all its branches (according to the teaching of the osteopathic school of practice) and (2) licenses to practice osteopathy in all of its branches, except major surgery. Holders of both kinds of licenses are to be permitted to make and sign birth and death certificates and to practice in hospitals supported in whole or in part by public taxation. H. 646, to amend the law relating to vital statistics, proposes that a certificate of birth contain, in addition to the data now required by law, a statement of the physical defects of the child, if any.

**B. J. Davis, Quack and Impostor.**—In December, 1932, a physician in Davenport, Iowa, reported that there had lately located in that town a man who claimed to be an electrotherapist and who gave his name as B. J. Davis. Davis, according to the physician, claimed to have come from Chicago and Kewanee, Ill. The Davenport physician was notified that no man of that name was a graduate of any reputable medical school or licensed to practice medicine in any state. A clipping from the Kewanee (Ill.) *Star-Courier* of Sept. 12, 1932, stated that B. J. Davis, who advertised himself as a chiropractor and physiotherapist, had been arrested by the Kewanee police on a charge of violation of the medical practice act. Now comes a report from Mr. J. E. Edwards, chief inspector of the state department of registration and education, with further information regarding B. J. Davis: In the fall of 1929, Davis was practicing medicine and selling real estate at Rockford without licenses, and Mr. Edwards was instrumental in having him arrested and sentenced to six months in jail. In August, 1932, the department received a complaint that a "Dr. Davis" was practicing medicine in Galva without a license. Investigation showed that it was B. J. Davis, and a report of Davis's previous conviction, together with evidence obtained of violations of both the medical practice act and the real estate act, resulted in his being sentenced to sixty days in jail on one charge, thirty days in jail on the other, and the imposition of a fine of $300.

### Chicago

**Program on the Endocrines.**—Guest speakers before the Chicago Medical Society, April 26, will be Drs. George W. Crile, Cleveland, and James B. Collip of McGill University Faculty of Medicine, Montreal, in a presentation of a new phase of the endocrines. Their respective subjects will be "Indications for and End-Results of Denervation of the Adrenal Glands" and "Recent Investigations on Anterior Pituitary Hormones."

**Dr. Felix Deutsch Lectures.**—"Psychogenic Factors in Heart Disease" will be the title of a lecture to be given in the Rothschild Auditorium, Michael Reese Hospital, May 2, by Dr. Felix Deutsch of the University of Vienna. The lecture is under the auspices of the cardiovascular department at Michael Reese Hospital and the Frederick K. Babson Fund. Established four years ago, the fund is principally for clinical and laboratory research in diseases of the heart and circulation. It is administered by Dr. Walter W. Hamburger.

**Capps Prize Awarded.**—Dr. Eugene L. Walsh, Cleveland, is the recipient of the Joseph A. Capps Prize for 1932, awarded by the Institute of Medicine of Chicago, for his "Studies on the Etiology of Gallstones." Dr. Walsh graduated from Northwestern University Medical School in 1931. The Joseph A. Capps Prize of $500 is awarded annually for meritorious medical research by a graduate of a medical school in Chicago completed within two years after graduation. At a meeting of the Institute of Medicine of Chicago, April 28, Dr. Walsh will deliver the prize-winning paper, and Dr. Richard H. Jaffe will speak on "Histogenesis of the Valvular Changes in Malignant Endocarditis."

**Society News.**—Dr. Karen Horney, associate director, Institute for Psychoanalysis, began a course of seven lectures on female psychology, April 18. Physicians and senior clinical students are eligible for the course, to be given Tuesdays.——At a meeting of the Chicago Laryngological and Otological Society, April 3, Drs. Ira Frank and Harry L. Pollock, among others, spoke on "Influence of Sir Phelix Semon on the Development of Laryngology" and "Head and Neck Manifestations in Metabolic Disorders," respectively.——Dr. Edward H. Weld, Rockford, Ill., discussed "Calcified Echinococcus Cyst of the Spleen" before the Chicago Surgical Society, April 7, among others, and Dr. Charles B. Huggins, "Experimental Observations on the Epithelium of the Gallbladder and the Genesis of Bone."——The Chicago Pathological Society was addressed, April 10, by Dr. George Milles, among others, on "Generalized Lymph Gland Reaction in a Transitional Cell Carcinoma of the Lungs."——Speakers before a joint meeting of the Chicago Roentgen Society and the Chicago Urological Society, April 12, were Drs. Noble Sproat Heaney, Herman L. Kretschmer and Eugene Ockuly, who discussed "Studies of Changes in the Upper Urinary Tract During the Course of Normal Pregnancy."——The Chicago Tuberculosis Society was addressed, April 13, by Drs.

Pol N. Coryllos, New York, on "Indications for Thoracic Surgery in Pulmonary Tuberculosis," and George G. Ornstein, New York, "A Clinical Classification of Pulmonary Tuberculosis."——Drs. Fred L. Adair and Morris Edward Davis gave a paper before the Chicago Gynecological Society, March 17, on "Aminography with Skiodan," and Dr. Edward D. Allen, one on "Studies Concerning the Etiology of Endometriosis." Speakers before the society, April 21, were Drs. Charles B. Reed on "Calcium Problems in Pregnancy," and Jacob P. Greenhill and Herbert E. Schmitz, "Sympathectomy for Intractable Pain in Inoperable Pelvic Malignancy."

## INDIANA

**Tuberculosis Meeting.**—The Indiana Tuberculosis Association will hold its twenty-second annual meeting at the Lincoln Hotel, Indianapolis, April 27. In addition to clinics, the scientific program will include the following physicians as speakers:

Victor H. Bean, Marion, Tuberculosis in Mental Cases.
James H. Stygall, Indianapolis, A New Observation in Pulmonary Tuberculosis.
Herman M. Baker, Evansville, Rôle of Spirochetes in Pulmonary Disease.
Hubert B. Pirkle, Rockville, Diagnosis of Childhood Tuberculosis.
Robert B. Sanderson, South Bend, Thoracic Surgery.

**Personal.**—Dr. William V. Stanfield, Attica, has been appointed health officer of Fountain County.——Dr. William McQueen has been named superintendent of the Sunnyside Sanatorium, Oaklandon.——The St. Joseph County Medical Society held a memorial dinner meeting, March 29, in honor of the late Dr. St. Clair Darden, superintendent of Healthwin Hospital. Dr. Jay Arthur Myers, Minneapolis, was the principal speaker; his subject was "Tuberculosis in Children."——Dr. Richard Stephenson, West Lebanon, has been appointed health commissioner of Warren County.——Drs. Ralph W. and Lynn W. Elston, both of Fort Wayne, have been awarded medals of the Purple Heart by the war department in recognition of citations for distinguished service in the World War.

**Indianapolis Medical Society News.**—Dr. Morris Fishbein, Chicago, editor, THE JOURNAL, discussed "State Medicine and Contract Practice" before the Indianapolis Medical Society, April 4. A symposium on blood dyscrasias in children constituted the program of the society, April 11, when Drs. Walter Stoeffler and Louis H. Segar were the speakers. April 18, the society heard Drs. Herbert F. Thurston and Oren E. Carter discuss "Experimental Surgery of Blood Vessels" and "Peripheral Vascular Disease," respectively. The society will meet jointly with the Methodist Hospital staff, April 25. Dr. Horace M. Banks will present a paper on "A Specific Factor in the Etiology of Reactions Following Intravenous Therapy. Dr. Nathaniel G. Alcock, Iowa City, spoke, March 28, on "Transurethral Resection of the Prostate."

**Advisory Committee Replaces State Board.**—Under a reorganization plan sponsored by Governor McNutt, the Indiana State Board of Health will be replaced by an advisory committee, newspapers reported, April 7. The executive work of the department will be under the direction of an executive secretary. Dr. John H. Hare, Evansville, has been named for this position, succeeding Dr. William F. King, Indianapolis, who had been state health commissioner since 1922. Scientific work of the health department will be carried on in the hospitals and units of Indiana University School of Medicine, Indianapolis, while other work will be done by a staff in the State House annex, where the department has been housed. Sanitary inspection work will be delegated to the state police department. Duties of the division of infant and child hygiene will be assumed by the university through its department of obstetrics. The division will be guided by a committee to be appointed by the dean and composed of members from all sections of the state. Through this change, Dr. Ada E. Schweitzer, Indianapolis, will be removed as director of the division, a position she has occupied since 1919. The new policy has been endorsed by the Indiana State Medical Association, it was stated.

## IOWA

**Graduate Courses.**—Three extension graduate courses have been arranged by the Speakers' Bureau of the state medical association. The first, on neurology and psychiatry, began March 2 in Ames and will extend through May 4. The weekly lectures will be given by Drs. Tom B. Throckmorton, Des Moines; Francis A. Ely, Des Moines; Philip C. Jeans, Iowa City; Clarence E. Van Epps, Iowa City; Andrew H. Woods, Iowa City; William Malamund, Iowa City, and Robert A. Stewart, Independence. A course on diseases of metabolism and endocrinology began at Mason City, March 9, to continue at weekly intervals through May 18. Physicians participating in this course are James C. Hill, Newton; Joseph Brown, Des Moines; Anton J. Carlson, Chicago; Fred M. Smith, Iowa City; Russell Wilder, Rochester, Minn.; Frank C. Mann, Rochester; Howard L. Beye, Iowa City; Clarence W. Baldridge, Iowa City; Frederick H. Lamb, Davenport; Martin I. Olsen, Des Moines; Henry S. Plummer, Rochester, Minn.; John deJ. Pemberton, Rochester; Julian D. Boyd and Frank R. Peterson, Iowa City; Daniel J. Glomset, Des Moines, and Dr. Van Epps, Iowa City. "Fundamentals in Medicine" constitutes the third course, which began in Waterloo, March 10, to continue each Thursday through May 18. Lecturers in this course include Drs. Alfred W. Adson and Charles Mayo, Rochester; Harry L. Alexander, St. Louis; Paul R. Cannon, Chicago; Walter C. Alvarez, Rochester; Henry L. Ulrich, Minneapolis; Henry P. Wagener, Rochester; Morse J. Shapiro, Minneapolis; Oscar H. Plant, Iowa City, and Dr. Baldridge. Any physician located near the centers where these courses are being presented may enroll.

## KANSAS

**The Porter Lectures.**—The third course of lectures under the Porter Lectureship in Medicine at the University of Kansas School of Medicine, Lawrence-Kansas City, was given, March 28-29, by Dr. John Shelton Horsley, Richmond, Va. The lectures were entitled:

Indigestion: Its Causes, Symptoms and the Principles of Treatment.
Some Aspects of the Problem of Cancer. Cancer of the Stomach.

In 1918, Dr. Joseph L. Porter, Paola, bequeathed to the medical school funds for the stimulation of scholarship and research in the medical school. A portion of the income has been used to provide a scholarship for a worthy student, and the remainder to defray the expenses of an annual lecturer in medicine.

**State Medical Meeting at Lawrence.**—The seventy-fifth annual meeting of the Kansas Medical Society will be held at the Memorial Union Building, University of Kansas, Lawrence, May 2-4, under the presidency of Dr. James D. Colt, Sr., Manhattan, and with the Douglas County Medical Society acting as host. Physicians included in the scientific program are:

James D. Colt, Sr., Financial Angle of the Medical Profession.
John D. Clark, Wichita, Sterility in Women.
Edward H. Hashinger, Kansas City, Mo., Overweight, Its Causes and Treatment.
Ralph I. Canuteson, Lawrence, Infectious Mononucleosis.
Earle G. Brown, Topeka, Tularemia, Summary of Cases Reported in Kansas.
Albert R. Hatcher, Wellington, Head Injuries.
Harold V. Holter, Kansas City, Trichomonas Vaginalis Vaginitis.
Charles T. Hinshaw, Wichita, Relationship of General Practice to Infantile Paralysis.
Carl F. Nelson, Lawrence, An Evaluation of the Normal.
Lerton V. Dawson, Ottawa, Essential Considerations in Cesarean Section.
Frank R. Teachenor, Kansas City, Mo., Differential Diagnosis and Treatment of Intracranial Lesions.
James G. Stewart, Topeka, Cardiac Neurosis.
William H. Young, Fredonia, The Health Officer and the General Practitioner.
Guy E. Finkle, Canton, Some Experimental Work with Rabies.
Lyle L. Woodfin, Osawatomie, Is Chronic Appendicitis a Myth?

Wednesday will be known as guest day. The following physicians will speak:

Philip C. Jeans, Iowa City, Certain Practical Aspects of Nutrition in Childhood.
Arthur A. Pleyte, Milwaukee, Finding Tuberculosis in Apparently Healthy Youth.
Russell L. Haden, Cleveland, The Problem of Chronic Arthritis.
Dean Lewis, Baltimore, Tumors of the Sympathetic Nervous System.
Edward L. Cornell, Chicago, The Physiology and Conduct of Normal Labor.

Ernst H. Lindley, LL.D., chancellor, University of Kansas, Lawrence, also a guest, will speak on "Higher Education and the Medical Profession." Entertainment will include the annual banquet, a golf tournament and luncheons.

## MARYLAND

**Personal.**—Dr. Emil Novak, associate professor of gynecology, University of Maryland School of Medicine and College of Physicians and Surgeons, will discuss the latest developments in endocrinology as they relate to diseases peculiar to women before the annual meeting of the British Medical Association in Dublin, July 26.

**Reorganization of Health Department Completed.**—With the establishment of the positions of director of milk control and director of food control, the reorganization of the Baltimore health department, undertaken some time ago, has been completed, it is reported. Mr. John M. Lescure, chief of the dairy farm inspection division, and Mr. Ferdinand

A. Korff, assistant director of the bureau of chemistry and food, will be placed in charge of the new positions, it was stated.

**Reward for Cancer Research.**—Johns Hopkins Hospital, Baltimore, has been made the beneficiary of a $30,000 trust fund through the will of the late Mrs. Katherine B. Judd, New York. The will provides that an income of $1,000 be paid annually "to the person who, in the judgment of the trustees, shall have made the greatest advancement toward the discovery of a cure for cancer," while the rest of the income is to be used for the relief of cancer patients, it was reported. A bequest of $15,000 is made available from the principal on satisfactory proof that a cure for cancer has been discovered and perfected.

**Dr. Smith Gives Thayer Lectures.**—The sixth course of lectures under the William Sydney Thayer and Susan Read Thayer Lectureship in Clinical Medicine was delivered, April 5-7, by Dr. Theobald Smith, formerly director, department of animal pathology, Rockefeller Institute for Medical Research, Princeton, N. J. Dr. Smith devoted the first two lectures to a discussion of "A Comparative Study of Focal Cell Reaction in Tuberculosis and Allied Disease." He chose "Undulant Fever" for the third lecture. In 1927, friends of the late Dr. Thayer donated a fund to Johns Hopkins University to endow a lectureship. The income of the fund is used to defray the expenses of one or more annual lectures on subjects in clinical medicine, pediatrics, neurology or borderline branches.

**State Medical Meeting at Baltimore, April 25-26.**—The one hundred and thirty-fifth annual meeting of the Medical and Chirurgical Faculty of Maryland will be held in Baltimore at the Faculty Building, April 25-26. The scientific program includes the following physicians:

Joseph Albert Chatard, president of the faculty, The Heritage of a Physician. A Tribute.
R. Tait McKenzie, Philadelphia, Facial Expression of the Emotions with Special Reference to Violent Effort and Fatigue.
Charles Bagley, Jr., Modern Neurologic Surgery: Its Beginning, Progress and Present Status.
Karl W. Ebeling, Congenital Duodenal Adhesions.
Esther L. Richards, Practical Features in the Study and Treatment of Anxiety States.
Edwin David Weinberg and Grant E. Ward, Influence of Diathermy on Bone Regeneration.
William Darrach, New York, First Aid Treatment of Fractures.

There will also be a symposium on medical economics at which Drs. Lewellys F. Barker will speak on "Costs of Medical Care"; G. Milton Linthicum, "Conservatism and Radicalism in Medicine," and Robert P. Bay, "Medical Profession in the Cost of Medical Care." A secretaries' conference will be held, April 26. Drs. McKenzie and Darrach will be the Trimble lecturers.

## MASSACHUSETTS

**Personal.**—The honorary doctorate of the University of Paris will be conferred on Dr. Harvey Cushing, emeritus professor of surgery, Harvard University Medical School, Boston, according to *Science*, March 24.——Dr. John J. Curley, Leominster, has been appointed associate medical examiner of the third Worcester district, succeeding the late Dr. Harold P. Blodgett.——Dr. Roy D. Halloran has been selected as superintendent of the Metropolitan State Hospital, Waltham, effective April 1.

**Dr. Loewi Gives Dunham Lectures.**—Dr. Otto Loewi, professor of pharmacology, Medical Faculty, Karl-Franzens University, Graz, Austria, will deliver two lectures under the Edward K. Dunham Lectureship for the Promotion of the Medical Sciences at Harvard University Medical School. "Humoral Transmission of the Nerve Impulse" will be the title of one lecture, May 4, and "Regulation and Adaptation" of the second, May 11. The lectureship was founded in 1923 in honor of Dr. Edward K. Dunham, who received his degree at Harvard in 1886.

## MICHIGAN

**Bill Introduced.**—H. 441 proposes to prohibit persons licensed to practice optometry from practicing under any name other than their own or under the name of any firm, corporation or association. Nothing in the bill, however, is to prohibit the practice of optometry by a partnership composed of licensed optometrists.

**Health Unit Closed.**—The Menominee County Child Health Demonstration Unit of the Children's Fund of Michigan was closed, March 15. Financial conditions caused the discontinuance of this unit and make necessary the curtailment of other activities of the Children's Fund throughout the state. The advisory committee of the unit voted to form a county health association to carry out such health activities as may be necessary and possible by a voluntary association.

**Dr. Riley Honored.**—The completion of fifty years' association with Battle Creek Sanitarium by Dr. William H. Riley was observed at a banquet in his honor, March 21. Dr. Riley is now head of the department of neurology at the sanitarium. Dr. Elmer L. Eggleston was toastmaster, and speakers included George E. Judd, business manager of the sanitarium, and Drs. Charles E. Stewart, Martin A. Mortensen, Charles W. Heald, and Harry B. Knapp, representing the Calhoun County Medical Society. A book, containing the autographs of the assembled guests, was presented to Dr. Riley.

## MINNESOTA

**Bill Passed.**—S. 1679 has passed the Senate, proposing to permit applicants for licenses to practice pharmacy to be examined if they have had two years work at schools of pharmacy and have had at least two years practical experience in hospital pharmacies. This bill proposes, too, that persons now registered as assistant pharmacists, who have worked in hospital pharmacies for four years or more, shall be eligible to be examined for licenses to practice pharmacy, regardless of whether or not they have attended schools of pharmacy.

## MISSOURI

**Dinner to Dr. Redman.**—Dr. and Mrs. Lewis C. Calvert, Weston, gave a dinner, January 25, to Dr. Spence Redman, Platte City, to observe his seventy-first birthday and his fiftieth anniversary in the practice of medicine. Dr. Redman, who is the son of a physician, was an organizer of the Platte County Medical Society and served as its president, secretary and treasurer. He has been secretary of the society consecutively since 1923 and has served as councilor of the twelfth district for the last twenty-six years. Members of the society were guests at the dinner.

**Society News.**—At a meeting of the Jackson County Medical Society, March 28, Dr. Benjamin Landis Elliott, Kansas City, spoke on "Localization of Brain Lesions with Special Reference to Misleading Symptoms and Signs," and Edgar Allen, Ph.D., dean, University of Missouri School of Medicine, Columbia, "Recent Experimental Evidence Concerning the Function of the Human Ovary."——Dr. Herman L. Kretschmer, Chicago, gave a clinic before the Kansas City Southwest Clinical Society, March 14, on borderline problems in urologic diagnosis. He also gave a clinic for the junior and senior medical students of the University of Kansas Medical School, and addressed a joint meeting of the Kansas City Southwest Clinical Society and the Jackson County Medical Society on vesical neck obstruction.——At a meeting of the St. Louis Medical Society, March 17, Drs. Marcus Pinson Neal, Columbia, spoke on "The Leukocyte Count as an Aid in Diagnosis and Prognosis," and Joseph F. Bredeck, "Blood Differential Counts in Diagnosis and Prognosis."——Dr. John H. Ryan, Maryville, addressed the Buchanan County Medical Society, March 15, on "Surgical Treatment of Diseases Related to Dysfunction of the Autonomic Nervous System."

## NEW YORK

**Symposium at Saranac Lake.**—A two-day medical symposium attended by about 300 physicians was held, February 4-5, at National Variety Artists' Sanatorium, Saranac Lake. Among speakers were:

Dr. Cyrus C. Sturgis, Ann Arbor, Mich., Intravenous Use of Liver Extract in Treatment of Pernicious Anemia.
Frank A. Hartman, Ph.D., Buffalo, Clinical Use of Cortin.
Dr. Edward W. Archibald, Montreal, Cause of Death Following Thoracoplasty.
Dr. Louis H. Clerf, Philadelphia, Diagnosis of Lower Lobe Pulmonary Lesions.
Dr. Horton R. Casparis, Nashville, Tenn., Tuberculosis in Children.
Dr. Edward Rist, Paris, France, Collapse Therapy of Bronchiectasis.
Dr. Francis M. Pottenger, Monrovia, Calif., Exudative Tuberculosis.

**Rules Governing Medical Relief of Indigent.**—The Temporary Emergency Relief Administration of New York has drawn up rules for medical relief for the indigent in districts in which relief is furnished on a fee basis. The relief administration authorizes the physician to provide medical care for two weeks, up to a limit of ten visits and an expenditure of $20. Care for longer periods may be authorized after reinvestigation of any case. In prolonged illness, one visit per week for three months is provided in general, but these cases are handled on an individual basis. Fees are arranged on a basis of not more than $2 for a home visit and $1 for an office visit. For obstetrical services in the home $25 is paid by the relief organization. Other special services are arranged individually, the charges to be in general a reduction of 33⅓ per cent from the ordinary county fee schedule. Physicians participating in this work are to submit separate monthly bills to the commissioner of public welfare, accom-

panied by the original authorization. Prescriptions are all to be filled from the National Formulary or the U. S. Pharmacopeia, bills for proprietary remedies not being reimbursable. Physicians are asked to use inexpensive drugs as far as possible. The Medical Society of the State of New York agreed to request each county medical society to appoint a committee to advise with the local commissioner of public welfare concerning the allocation of cases, proposed changes in policy, complaints and reasonableness of bills. These rules were recommended by the state department of health and a special committee of the state medical society and approved by the executive committee of the council of the state society, March 9. Members of the special committee were Drs. James N. Vander Veer, Albany; Albert G. Swift, Syracuse; Hyzer W. Jones, Utica, and Joseph S. Lawrence, Albany.

### New York City

**New Pavilion at New York Hospital.**—A new pavilion of thirty beds was opened at New York Hospital-Cornell Medical Center, March 13, for the use of part-time members of the staff. Twenty beds are for general surgery and ten for urologic cases. The opening of the pavilion, which brings the total number of surgical beds to 176, marks the expansion of services curtailed by the depression, it was said.

**Biggs Memorial Lecture.**—Dr. Herman O. Mosenthal delivered the Hermann Michael Biggs Memorial Lecture of the New York Academy of Medicine, April 6, on "Diabetes Mellitus: Problems of Present-Day Treatment." The address was discussed by the following speakers: Drs. Charles F. Bolduan, public health problems; Elliott P. Joslin, Boston, heredity and prevention; Nellis B. Foster, clinical phases, and Louis I. Dublin, Ph.D., recent trends in diabetes mortality.

**Protest Restricted Choice of Physicians.**—The Bronx County Medical Society recently adopted resolutions protesting against what it called "the present monopoly and discrimination now being exercised in the treatment of employees of the city of New York in compensation cases" and urging that the employees of the city be allowed free choice of physicians in compensation cases. Copies of the resolutions were sent to the other four county societies in New York City with recommendations for adoption by them.

**Changes at New York University.**—The former department of bacteriology and hygiene at New York University and Bellevue Hospital Medical College has been divided into two departments: bacteriology and preventive medicine. Dr. William H. Park was appointed head of the department of preventive medicine as the first Hermann M. Biggs professor of preventive medicine and K. George Falk, Ph.D., was appointed professor of chemical bacteriology in preventive medicine. The department of therapeutics has been incorporated in the department of medicine, with a separate endowed chair named in honor of former dean Samuel A. Brown. Dr. Arthur C. DeGraff has been appointed the first Samuel A. Brown professor of therapeutics.

## NORTH CAROLINA

**Bill Enacted.**—H. 15 has become a law, repealing the law requiring applicants for marriage licenses to present certificates from licensed physicians certifying to the freedom of the parties to the proposed marriages from certain diseases.

## OHIO

**Society News.**—Dr. Joseph T. Belgrade, Wheeling, W. Va., addressed the Jefferson County Medical Society, Steubenville, February 28, and the Belmont County Medical Society, St. Clairsville, March 2, on "Intradermal and Cutaneous Methods of Testing in Food Allergy."——Dr. Warren C. Breidenbach, Dayton, addressed the Preble County Medical Society, Eaton, March 23, on "Compression Therapy in Pulmonary Tuberculosis."——Dr. John E. Greiwe, Cincinnati, was the speaker at the March meeting of the Clinton County Medical Society, Wilmington, on "The New Physiology of the Heart."——Dr. Earl F. Henderson, New Castle, Pa., addressed the Stark County Medical Society, Canton, March 14, on "Symptoms and Treatment of Peptic Ulcer."

**Cancer Campaign.**—The sixth annual Postgraduate Day of the Mahoning County Medical Society was held in Youngstown, April 20. The sessions were devoted to discussions of cancer by members of the staff of Memorial Hospital, New York. Dr. James Ewing spoke on "Refinements in Tumor Diagnosis," "Melanoma" and "Specializing in Cancer." Dr. Lloyd F. Craver discussed "Diagnosis and Treatment of Hodgkin's Disease" and "Medical Problems in the Treatment and Diagnosis of Cancer." Dr. Benjamin S. Barringer's addresses were on "The Past and the Present in the Treatment of Genito-Urinary Carcinoma" and "Radium Treatment of Cancer of the Bladder." Dr. Burton J. Lee addressed the sessions on "Cancer of the Breast" and "The Rôle of Surgery and the Rôle of Irradiation in the Treatment of Cancer." Dr. Gordon G. Nelson, Youngstown, was chairman of the committee that arranged the program. The society carried on a campaign of education on cancer, April 13-20, with the cooperation of the Federation of Women's Clubs.

## OKLAHOMA

**Bills Enacted.**—The following bills have become laws: S. 138, prohibiting the cultivation or selling or other distribution of mariahuana, cannabis indica or any other preparation made from the botanic genus cannabis, except on the written prescription of a licensed physician, dentist or veterinary surgeon; and S. 139, permitting any person who is above thirty-one years of age and of good moral character and who has had ten years' practical experience in compounding physicians prescriptions in the state, to become a registered pharmacist on passing the examination required by the pharmacy board.

## OREGON

**Library Presented to Medical School.**—Dr. Ernst A. Sommer, Portland, has given his private medical library of about 3,000 volumes to the University of Oregon Medical School. The gift has been designated the Ernst A. Sommer Collection and has been placed in a special room to be used as a faculty and clinical reading room. The facilities of the library are available to the medical profession, medical students and others interested in medical subjects in Oregon and the Pacific Northwest.

## PENNSYLVANIA

**Personal.**—Dr. William A. Haman, Reading, celebrated the fiftieth anniversary of his entrance into medical practice, March 13; the staff of Homeopathic Medical and Surgical Hospital, of which he has been a member since 1891, presented him a bronze plaque to commemorate the occasion.

### Philadelphia

**Illegal Practitioner Sentenced.**—William R. Vaughn, a Negro, was sentenced to three years in the Philadelphia County prison recently after he had pleaded guilty to a charge of practicing medicine without a license and false pretense. A court record was read showing that Vaughn had been convicted for the same offenses in 1929 and sentenced at that time to six months' imprisonment and a fine of $500.

**Personal.**—Samuel E. Pond, Ph.D., assistant professor of physiology in the schools of medicine and dentistry, University of Pennsylvania, has resigned to become technical manager of Marine Biological Laboratory, Woods Hole, Mass.——Dr. Leonard Fiske Wilbur, an intern at the University of Pennsylvania Hospital, will go to China in September as a medical missionary in Shansi province. He is a son of former Secretary of the Navy Curtis D. Wilbur.

**Instruction in Behavior Problems.**—A program of weekly seminars on behavior problems of childhood is being offered to physicians by the William T. Carter Foundation of the University of Pennsylvania in cooperation with the Child Guidance Clinic and the Children's Hospital. Dr. Frederick H. Allen, director of the clinic, has been appointed a special member of the staff of the foundation to direct the seminars. The plan will be carried on for one year on an experimental basis.

**Seminars on Gastro-Enterology.**—The final group of postgraduate seminars sponsored by the Philadelphia County Medical Society for this season is concerned with gastro-enterology. Lectures have been given by Drs. Harry L. Bockus, on "Management of Diseases of the Liver" and B. B. Vincent Lyon, "Management of Diseases of the Gallbladder." Dr. Henry J. Bartle will speak on "Management of Diseases of the Intestines," April 28, and a general discussion will be held, May 5.

## RHODE ISLAND

**Narcotic Violation.**—Dr. John B. Coffey was committed to the Providence County Jail in December to serve a sentence of one year for violation of the narcotic laws, imposed by the United States District Court of Rhode Island.

**Society News.**—Dr. Eske H. Windsberg, Providence, addressed the Newport County Medical Society, Newport, January 26, on surgical treatment of pulmonary tuberculosis.——A symposium on diabetes mellitus was presented at a

meeting of the Providence Medical Association, April 3, by Drs. Herman A. Lawson, Louis I. Kramer and Alexander M. Burgess. Dr. Rocco Abbate, Lakewood, presented cases.—— Frederic L. Wells, Ph.D., chief of the psychologic laboratory, Boston Psychopathic Hospital, gave a lecture on "Symbolism" at the State Hospital for Mental Diseases, Howard, February 27. —— Dr. Eliot A. Shaw, Providence, addressed the Washington County Medical Society, Westerly, April 12, on "Surgical Problems Presented by Patients with Jaundice."

## SOUTH CAROLINA

**Bill Introduced.**—H. 980 proposes to accord compensation to workmen injured in the course of their employment and to the dependents of workmen killed in the course of their employment. Compensation is to be paid also for disabilities resulting from all diseases arising out of any employment covered by the act. Workmen, apparently, are not to have the right to select their own physicians.

## TENNESSEE

**Personal.**—Dr. Edwin W. Cocke, superintendent of Western State Hospital, Bolivar, since 1918, has been appointed state commissioner of institutions. Dr. Wesley W. Wallace, assistant superintendent for four years, succeeded Dr. Cocke at Bolivar.——Dr. Marcus G. Spingarn, Memphis, was appointed a member of the Tennessee State Board of Medical Examiners, March 21, to succeed Dr. Alfred B. DeLoach, who died, March 17. Dr. Spingarn is a member of the urological department of the University of Tennessee College of Medicine and is president of the Memphis Urological Association.

**University Appointments.**—Dr. William T. Pride, associate professor of obstetrics at the University of Tennessee College of Medicine since 1909, has been appointed head of the department to succeed the late Dr. Percy Toombs. Dr. James R. Reinberger has been promoted to associate professor and Dr. Walter A. Ruch to assistant professor of obstetrics. Dr. Emmett R. Hall, formerly associate professor of dermatology, has been made professor and head of the department of dermatology. Dr. Clement H. Marshall was promoted to associate professor in that department. Dr. John L. McGehee, professor of surgery, has been appointed head of the department of surgery to succeed the late Dr. Louis W. Haskell.

**Bills Introduced.**—S. 683 proposes to require the board of medical examiners to issue licenses to practice medicine in counties having populations of not less than 21,700 nor more than 21,790, to persons who submit affidavits showing that they are more than 30 years of age, graduates of class B medical schools and have been practicing actively for more than six years. S. 776 proposes to license to practice medicine in McNairy County, disabled soldiers of the World War who have had at least twelve months' service in the medical corps of the army or navy, who are graduate pharmacists from recognized schools of medicine [sic], and who have been actively engaged in the retail drug business and in prescribing and administering drugs for at least ten years in any county or counties coming within the provisions of this act. S. 750 proposes to require the state department of public health to manufacture and distribute to health officers and heads of state institutions such vaccines and other biologic products as the division of laboratories is equipped to produce.

## TEXAS

**Dr. Cary Honored.**—Dr. Edward H. Cary, Dallas, President of the American Medical Association, was guest of honor at a dinner given by the Medical Club of Philadelphia at the Bellevue-Stratford Hotel, April 21.

**Bill Passed.**—H. 88 has passed the House and Senate, proposing to accord hospitals or clinics rendering hospital services, caring for persons injured through the fault of other persons, liens limited to $5 for each day of treatment on any rights of action, recoveries or settlements accruing to the injured persons by reason of their injuries.

**County Health Officers Appointed.**—The following new county health officers have recently been appointed, according to the *Texas State Journal of Medicine:*

Dr. Robert R. Davis, Marfa, Presidio County.
Dr. Lewis E. Turrentine, Tahoka, Lynn County.
Dr. James D. Baucum, Longview, Gregg County.
Dr. McIver Furman, Corpus Christi, Nueces County.
Dr. Jesse W. Hawkins, Lufkin, Angelina County.
Dr. C. Thomas Lynch, Wichita Falls, Wichita County.
Dr. Charles Todd, Dalhart, Dallam County.
Dr. James D. McCann, Raymondville, Willacy County.
Dr. Varney Andrews, Floydada, Floyd County.

## WASHINGTON

**Society News.**—Dr. Guy L. Boyden and B. E. Loomis, D.D.S., Portland, Ore., addressed the Cowlitz County Medical Society in February on chronic maxillary sinusitis and trifacial neuralgia, respectively, and Dr. James W. Henderson, Longview, discussed medical economics.—— Drs. Leon G. Woodford, John F. Beatty, William V. Fulton, Everett, and Harold J. Greer, East Stamwood, presented a symposium on diseases of the heart at the February meeting of the Snohomish County Medical Society, Everett.——Dr. Norman M. Keith, Rochester, Minn., addressed the King County Medical Society, Seattle, April 3, on chronic nephritis, and Dr. William V. Mullin, Cleveland, on differential diagnosis of hoarseness.

## WISCONSIN

**Graduate Course in Obstetrics.**—Dr. Arthur H. Curtis, professor of obstetrics and gynecology, Northwestern University Medical School, Chicago, gave the first lecture in a graduate course in obstetrics sponsored by the Milwaukee County Medical Society, March 20. Drs. Henry J. Olson, Albert H. Lahmann, Jr., and Rudolph W. Roethke are continuing the lectures in obstetrics and Drs. Harold W. Shutter, Robert E. McDonald and Roland S. Cron, those in gynecology.

**Immunization Program.**—Dr. Archibald L. Hoyne, Chicago, will give the first lecture in a graduate course on "Newer Methods of Immunization and Vaccination" in Milwaukee, April 27, sponsored by the Milwaukee County Medical Society. Dr. Frank E. Drew is director of the course. Beginning May 1, clinics will be organized in private hospitals for demonstration of technics of immunization. The course will close the latter part of May with an address by Henry F. Vaughan, Dr.P.H., Detroit, on "Medical Participation in Public Health Work." This is one point in a threefold plan launched by the society to develop a program of preventive medicine. The society proposes to establish free immunization clinics for the indigent and also to stimulate private physicians to offer immunization and vaccination service at reduced rates.

**Urological Society to Meet in Cleveland.**—The Wisconsin Urological Society will hold its spring meeting at the Cleveland Clinic, Cleveland, April 28-29. Operative clinics will be held each morning. Friday, April 28, the following program will be presented:

D. Roy McCullagh, Chemistry of the Male Sex Hormone.
Dr. Ernest P. McCullagh, Diagnosis and Treatment of Hypogonadism.
Dr. William E. Lower, Role of the Testes in the Endocrine System.
Dr. Eugene L. Walsh, Experimental Hypophysectomy.
Dr. Bernard H. Nichols, Roentgen Observations in Diagnosis of Renal Tuberculosis.
Dr. William J. Engel, End-Results of Transurethral Resection.
Dr. Russell L. Haden, Relation of Focal Infections of the Genito-Urinary Tract.
Dr. Charles C. Higgins, Further Observations in the Experimental Production of Urinary Calculi.
Dr. Ursus V. Portmann, Radiation Therapy in Cases of Malignancy of the Genito-Urinary Tract.
Dr. George W. Crile, Demonstration of Autosynthetic Cell.

Dr. Lower will give an address at the annual banquet, entitled "Why the Specialties? Urology." Dr. Walter M. Kearns, Milwaukee, is president of the society.

## GENERAL

**Credentials Missing.**—A duplicate diploma from the College of Medical Evangelists, Los Angeles, and a certificate from the National Board of Medical Examiners are being issued to Dr. Jacob J. Janzen, Mwami Mission, P. O. Fort Jameson, Northeast Rhodesia, South Africa, the college reports. Dr. Janzen believes that his original credentials were stolen during a journey from Capetown to Fort Jameson. State boards are urged to watch for these credentials, as it is believed that some one will attempt to use them in the United States. Dr. Janzen graduated from the College of Medical Evangelists in 1931.

**Medical Fellowship at Geneva.**—A fellowship for graduate study at the medical faculty of the University of Geneva is available to an American for the academic year 1933-1934, under the auspices of the Institute of International Education. To be eligible a candidate must be an American citizen and a graduate of an approved American medical school or the holder of a master's or doctor's degree in a science related to medicine and must have a thorough knowledge of French. Preference will be given to unmarried candidates under 35 years of age, either men or women. The stipend is 3,000 Swiss francs, approximately $600, which is said to be sufficient for living expenses on a moderate scale.

**Pacific Science Congress.**—Plans for the fifth Pacific Science Congress, to be held in Victoria and Vancouver, B. C., June 1 to 14, have been announced by the National Research Council of Canada. This congress was to have been held in May, 1932, but was postponed because of economic conditions. The program includes groups of discussions of the biologic and physical sciences. The United States government has been invited to appoint twenty-five delegates and the National Research Council of the United States has been authorized to invite universities and learned institutions in this country to participate. The Pacific Science congresses, which are concerned with scientific problems relating to the Pacific area, have been held previously in Honolulu (1920), Sydney and Melbourne (1923), Tokyo (1926) and Batavia and Buitenzorg (1929). They are organized under the immediate auspices of the national research council or corresponding scientific body of the country in which they are held and under the general sponsorship of the Pacific Science Association. Institutions wishing to appoint delegates are requested to communicate with Dr. William H. Howell, National Research Council, Washington, D. C.

**Facilities for Lepers.**—Existing facilities for the care and treatment of leprous persons in Hawaii are adequate for the protection of the public health, if present policies are continued, an investigating board of the U. S. Public Health Service has recently reported to Congress. A survey of facilities for these persons was made in the summer of 1932 under authority of a joint resolution adopted by Congress after the governor of Hawaii had reported that the cost entailed in this care was a burden on the "limited resources of the territory." Members of the U. S. Public Health Service who comprised the board are Drs. James C. Perry, John W. Kerr and George W. McCoy. Facilities for care of lepers consist of Kalihi Receiving Station near Honolulu, Oahu; an outpatient clinic in the city of Honolulu, and Kalaupapa settlement on the island of Molokai, where patients are sent only when they volunteer to go. As of June 30, 1932, Kalihi had 162 lepers under care; Kalaupapa, 430 and released patients in their homes totaled 145. The general admission rate to the leper station in the decade from 1910 to 1920 was 0.36, and that for the decade 1920-1930, 0.16 per thousand, a decrease of about 50 per cent in twenty years. The investigating board concluded that existing facilities are adequate if the present rate of admission continues, although if the policy of voluntary transfers to Molokai is maintained, some expansion at Kalihi will be necessary. More efficient organization for the apprehension of suspects and surveillance of contacts was recommended.

**Narcotics Limitation Convention Ratified.**—The Department of State at Washington has been notified that ratifications of the Narcotics Limitation Convention drawn up at a conference in Geneva in 1931 had been forwarded to the League of Nations by a sufficient number of countries to insure its going into effect, July 10. The enforcement of this convention is expected to constitute an important step in the suppression of illicit traffic in narcotics. As the manufacture of narcotics in this country is already closely limited to the amount needed for medicinal purposes, the chief advantage to the United States lies in the control of manufacture in other countries, whose surplus constitutes the chief source of supply for the illicit traffic here. Little if any additional legislation or change in enforcement machinery will be necessary, as the government now limits the quantity manufactured, prohibits importation of habit-forming derivatives of opium and the coca leaf and rigidly controls distribution of these substances. Under the system provided by the treaty, each country is to submit annually to a supervisory body an estimate of its needs based on the medical and scientific requirements so far as it relates to domestic consumption. Importation and exportation are to be regulated with a view to preventing accumulation of an excess over these estimates. Each country is required to exercise strict supervision over the amounts of raw material and manufactured drugs in the possession of its manufacturers. The treaty extends control to the distribution of codeine, which had not hitherto been included in international opium conventions, and also to substances prepared synthetically but identical in chemical constitution with opium and coca-leaf derivatives. It includes as well new substances that may be discovered or developed in the future. Export trade in heroin is prohibited unless the drug is desired by the importing country and is consigned to the government. The convention limits the exportation of narcotics generally to shipments for which an import certificate from the country of destination has already been obtained and the standard form of certificate recommended contains a specification that the drug is to be imported for medical or scientific needs.

## HAWAII

**Graduate Courses Continued.**—In accordance with its recently established policy of bringing graduate study to its members, the Honolulu County Medical Society has arranged for two courses of lectures to be given immediately preceding the annual meeting of the Hawaii Territorial Medical Association, April 29-30 and May 1. Dr. Barney Brooks, professor of surgery, Vanderbilt University School of Medicine, Nashville, Tenn., will conduct a course on general surgery, and Dr. William S. Middleton, associate professor of medicine, University of Wisconsin Medical School, Madison, will deliver twelve lectures on internal medicine. Both physicians will appear on the program of the meeting of the territorial medical association.

## PHILIPPINE ISLANDS

**Society News.**—The Philippine Public Health Association, organized in June, 1932, elected the following officers in December: Drs. Jacobo Fajardo, Manila, director of the Philippine Health Service, president; Tranquilino Elicano of the Public Welfare Commission, Manila, vice president, and Hilario Lara of the School of Hygiene and Public Health, secretary.

## FOREIGN

**Congresses in France.**—A meeting of French-speaking physicians practicing radiology and electrology will be held in Paris, October 12, at the Paris Faculty of Medicine, under the auspices of the Société Française d'Electroradiologie et de Radiologie Médicales, the Société de Radiologie Médicale Française and the Société Belge de Radiologie. Subjects to be discussed are radiologic examination of the mucosa of the large intestine and the short wave. French-speaking physicians of all countries are invited.——The fourteenth International Congress of Hydrology, Climatology and Medical Geology will be held in Toulouse, October 4-8, under the presidency of Professor Sabatier, honorary dean, Toulouse Faculty of Sciences, and Professor Abelous, dean, Toulouse Faculty of Medicine and Chemistry. Among subjects announced for discussion are: rare gases of mineral waters; climatic cures and pulmonary tuberculosis; primary nonsuppurative infections of the nervous system; legal control and survey of mineral waters.

**Typhus Epidemics in 1932.**—Egypt and Russia had the world's severest outbreaks of typhus fever in 1932, according to a summary in the *Epidemiological Report* of the Health Section of the League of Nations. In Egypt the epidemic, which was limited to the Nile delta and did not affect the larger cities, broke out in February and died out the latter part of November, the total number of cases reported being 2,198. In 1931 there were only 265 cases reported. In the European part of the Soviet Union nearly 40,000 cases were reported in the first half of 1932, double the number for the two preceding years together. The number of cases in the Asiatic territories of the union during the first six months of 1932 was 19,250, compared with 3,692 during the whole of 1931. A small outbreak occurred in Chile, 183 cases from the middle of March to November 5. A special form of endemic typhus has been observed in São Paulo, Brazil, in the past three years, the report states. Sixty-eight cases were recognized between October, 1929, and December, 1931, in which the fatality rate ran as high as 80 per cent of the cases identified.

**Society News.**—The German Society for Internal Medicine held its forty-fifth meeting, April 18-21, in Wiesbaden, under the presidency of Professor Lichtwitz of Berlin.——The thirty-seventh congress of French-speaking alienists and neurologists was held at Rabat, Morocco, April 5-12, under the presidency of Prof. Georges Guillain, Paris.——An international congress on the care of children will be held in Paris, July 4-9. Eight sections of the congress will be devoted to maternity, early childhood, late childhood, adolescence, abnormal childhood, social service, legal rights of the child and to questions of maternal and child welfare not included under any of these headings. Information may be had from the secretariat, 26, Boulevard de Vaugirard, Paris, XV.——The fifth Sir Charles Hastings Lecture of the British Medical Association was delivered, February 21, at the association house, by Sir Henry Gauvain, on "Sun, Air and Sea Bathing in Health and Disease."——The annual meeting of the Royal Institute of Public Health of England will be held in Blackpool, May 30 to June 4, under the presidency of Viscount Leverhulme.——The seventh congress of the Society for Diseases of Digestion and Metabolism will be held in Berlin, September 25-27, under the chairmanship of Dr. Hermann Strauss, Berlin.

# Foreign Letters

## LONDON

*(From Our Regular Correspondent)*

March 25, 1933.

### The Nomenclature of Smallpox

For some time the mild form of smallpox has existed in this country. It is generally accepted that it breeds true and does not give rise to the severe form of smallpox. The distinction between the two is recognized under the terms variola major and variola minor in the International List of Causes of Death and in the Nomenclature of Diseases of the Royal College of Physicians. In a letter to the *British Medical Journal*, Dr. C. K. Millard, health officer for Leicester, points out that it is misleading to write and speak of "smallpox" as if there were only one condition. There is no evidence that variola minor ever changes into variola major either in this country, where tens of thousands of cases have occurred, or in the United States, where the experience is much greater. Dr. Millard refers to an annotation in the *British Medical Journal* in which the one term "smallpox" is used to cover both varieties. He suggests that all returns relating to smallpox should have two columns, one for variola major and the other for variola minor. The terms "mild smallpox" and "virulent smallpox" do not at all meet the case, for variola minor is not always mild and variola major is not always virulent. The *British Medical Journal* replies that many epidemiologists and health officers will be in sympathy with Dr. Millard's plea but that it will hardly appeal to the working physician. He has quite enough difficulty in deciding that a particular case is smallpox without having to add a distinction which is hardly within his province and which in the individual case he cannot substantiate. It should be left to the health authorities to declare, on the observation of total cases, what is the prevalent type of smallpox.

### The British Post-Graduate Hospital and Medical School

In spite of its wealth of clinical material, its twelve medical schools and a large number of hospitals, London has never had a central graduate hospital and medical school. Two of the smaller hospitals, however, are devoted to graduate work, and the Fellowship of Medicine makes elaborate arrangement for graduate instruction at many hospitals. After three years of delay, arrangements have been completed for the British Post-Graduate Hospital and Medical School at Hammersmith (West London). The hospital is a municipal one under the control of the London County Council, which is now responsible for the whole municipal hospital system of the metropolis. Because of the national importance of a central graduate school, the government proposed to contribute $1,250,000 toward building and equipment, but the financial stress led to the less costly scheme of $1,000,000, half of which is to be the contribution of the government. The scheme will have great advantages for the council's hospital system, as it must improve the service. The best medical and surgical skill of the day will be available not only for teaching but also for treatment. The council's own medical staff can attend for graduate study, and patients who require special skill in diagnosis or specialized treatment can be sent from its other hospitals. The staff of the graduate hospital will be appointed and paid by the school, subject to the approval of the council, and the council will contribute toward the cost the sum that would have been payable by it to the staff if it had been in the council's employment for the consultant, laboratory and other work done for the patients. The maintenance and the domestic and nursing staff will be appointed by the council. An agreed number of graduate students will be resident at the hospital, one fourth to be nominated by the council and three fourths by the school, but the council will be entitled to the services of all students in connection with the hospital work in a manner to be agreed on.

## PARIS

*(From Our Regular Correspondent)*

March 8, 1933.

### Anniversary of Society of Exotic Pathology

The Société de pathologie exotique celebrated recently its twenty-fifth anniversary, at the Institut Pasteur, under the chairmanship of Dr. Roux. The society was honored by the attendance of the president of France. Professor Mesnil gave a detailed definition of "exotic pathology." Professor Brumpt, president of the society, traced the events of the past twenty-five years and set forth the society's present aims. Mr. Albert Sarraut, colonial minister, and formerly governor of French Indo-China, gave a magnificent eulogy of the colonial physicians, whose courageous work had made possible the great extension of French colonial possessions. Films were projected of photographs brought home by Professor Brumpt from his travels in foreign countries. He surveyed the chief endemic parasitic diseases of the American continent and described their etiology and mode of transmission. Mr. Roubaud exhibited films to illustrate the diseases of French Equatorial Africa. Three other scientific sessions followed the inaugural session, each being devoted to the consideration of an important introductory paper. Mr. Sanarelli of Rome took up the pathogenesis of intestinal infections of countries with hot climates. He advanced a theory to the effect that the microbes which cause these diseases do not come directly from the outside, to the digestive tract, but by way of the blood, after having been introduced into the blood stream in the mouth and throat. He applies this theory to cholera, typhoid fever and intestinal anthrax. He likewise regards the internal employment of antiseptics as useless and prefers vaccines and mild purgations.

Mr. S. Adler of Jerusalem discussed the mode of transmission of protozoans found in the blood (malaria, leishmaniosis) and their behavior in the organs of Phlebotomus, Stegomyia, and the like.

Mr. Charles Nicolle took up the problem of whether there is more than one form of typhus, utilizing the agglutination tests. He reached the conclusion that there is the classic or ordinary typhus, and a form of typhus that is transmitted from rat to rat by lice but may be transmitted accidentally to man by fleas.

### Association for Study of Sex Problems

At a recent meeting of the Association d'études sexologiques, presided over by Mr. Justin Godart, former minister of public instruction, physicians, sociologists, jurists and parliamentarians took part in a long discussion on birth control and finally turned to the question as to whether abortion is justified in certain cases. Prof. Victor Basch, professor at the Sorbonne, and president of the Ligue des droits de l'homme, pointed out that French law punishes severely birth control propaganda under whatever form it is practiced, although material or apparatus designed for that purpose is sold in large quantities in all drug stores with very little ado about it. He discussed whether persons have a moral right to restrict the birth of children, when it is a question of couples legally married or otherwise. He pointed out that births are most numerous among the underprivileged classes. The husband, too often intoxicated, may produce degenerate children, whereas restrictions are practiced chiefly among the well-to-do classes, in which he said healthy children are more likely to be produced. From the point of view of morals, the question may be raised as to what extent society has the right to control births. While society has an interest in the propagation of the race, it has a greater interest in seeing that the elements of which it is composed shall be sound and without defects. It should

therefore have the right to exert a certain control over births. That is accomplished in the United States by the practice of birth control and by the creation of child welfare centers attached to maternity hospitals, and in England, where the movement is supported by the Anglican church, also in Germany, Japan and soviet Russia. The author submitted for consideration the question of revising the law pertaining to birth control. He brought up also the creation of consultation centers where physicians, aided by social workers, would have the right to give solely prophylactic advice on birth control. Professor Achard spoke of the seriousness of motherhood and childbirth for women, particularly those with tuberculosis or heart disease. He admitted that there are cases in which the physician is justified in interrupting pregnancy, but added that his conscience is the sole judge in selecting the cases. Dr. Jean Dalsace, general secretary of the society, discussed clandestine abortions. He cited detailed statistics on the number that result in immediate mortality and those which result in metritis and salpingitis, which compel women to frequent consultation centers and lead often to operations. Of 133 sterile women desiring children, Dalsace was able to trace eighty-one cases to an abortion. He took up a study of the social, economic and psychologic causes. The remedy does not lie in religious ideas nor in judicial laws. The law of 1920, which places these cases under the jurisdiction of the correctional courts and not under the court of assizes, which nearly always acquit the accused, has not proved effective. In view of the failure of the laws the author recommended two remedies—birth control and legal abortion—which he considered in minute detail. He frankly advocated also sterilization of abnormal, defective and insane persons. He demanded the creation of a compulsory prenuptial certificate, with legalization of supervised abortion. Dr. Toulouse proposed and had adopted by the assembly resolutions giving expression to his ideas. He demanded that unmarried couples be compelled to be married in case of pregnancy, but the assembly refused to endorse this view.

## BERLIN

*(From Our Regular Correspondent)*

March 20, 1933.

### International Measures Against Psittacosis

The investigations of the international bureau of health have aided in securing more precise statistics on the incidence of psittacosis in various countries and the adoption of international measures for the prevention of the extension of this disease. Rodenbeck, of the federal public health service, has an article on the subject in the *Reichsgesundheitsblatt*. Up to 1929 the incidence of psittacosis was low, but since 1929 its frequent epidemic appearance has occupied the public mind. As a disease of man, it is an infectious disease caused by a filtrable virus that is easily obtained from the excrementa and various organs of animals that have died from the disease. The virus can be transferred to other animals. The incubation period is from seven to fourteen days. The virus retains its virulence up to four months. Healthy virus carriers among the parrots play a part in the transmission of the disease. The source of infection for man is primarily the diseased parrot. During the period 1929-1930, many countries became infected as a result of the importation of parrots from Argentina. Of a total of 800 cases, 215 occurred in Germany, with a mortality of 20.9 per cent. An embargo on the importation of parrots brought an end to the epidemic. Since that time, sporadic cases have been observed until recently. There have been a few slight outbreaks in Cologne, Leipzig (repeated), Breslau, Berlin, and some foreign parts. In each instance, a short time before the appearance of the disease manifestations, one or more parrots had been recently introduced within the area in which the outbreak occurred. A few persons became infected through animal experimentation (in April, 1932, Professor Prausnitz, the director of the Hygienic Institute in Breslau was attacked). While an absolute embargo against the importation of parrots proved to be the most effective weapon against the disease, other measures were tried, such as examination of the animals in the foreign country before shipment, supervision of the animals during transportation, and segregation of diseased animals. Epidemics of psittacosis can be prevented by these means, but a few sporadic cases will probably continue to occur in Germany. During the past few months, however, no cases of psittacosis have been reported, doubtless owing to the application of the strict measures just cited.

### Hospitals in Relation to Health Insurance

The marked development in the German hospital system was stimulated to an exceptional extent by health insurance. It is not surprising that loss of members and declining receipts in the sick benefit associations (krankenkassen) during the years of the economic crisis have had serious effects on the hospitals. From an inquiry that was recently made by the Gutachterausschuss für das öffentliche Krankenhauswesen, the effects by way of reducing the performance of numerous krankenkassen have been plainly visible. Whereas in former years an average of about 60 per cent of hospital inmates and of days of hospitalization fell to the account of the krankenkassen, and public welfare services contributed scarcely a third of the hospital patients, in many hospitals today only about one third of the patients are hospitalized through the krankenkassen, and the taxpayers have to assume the responsibility for about two thirds of the patients, through the public welfare agencies. For a better understanding of the many difficulties that have confronted the hospitals in the last two years and have occasionally led to serious results, the following statements concerning the mutual relations between health insurance and hospitals, as presented by Dr. F. Goldmann, *oberregierungsrat* in the federal ministry of the interior, in *Der Krankenhausarzt*, are cited. During the rapid development of the German hospitals, the expenditures of the German krankenkassen for hospital care increased markedly in an absolute sense and also in relation to other items of expense, as is shown by a survey of the existing conditions in the federally authorized krankenkassen. At the beginning of the work, in 1885, the modest sum of 4,500,000 marks ($1,071,000) was available, but by the end of the century the revenue had increased to 19,600,000 marks ($4,664,800). By 1913 the expenditures had risen to 58,900,000 marks ($14,018,200), and by 1925 to 150,200,000 marks ($35,747,600), with further steady increases, reaching finally, in 1930, the amount of 257,000,000 marks ($61,166,000). The upswing in the expenditures for hospital care does not correspond, however, to the increase in membership and the augmentations in the charges for hospital care but shows an increased participation of the krankenkassen in the important tasks of health conservation through hospital treatment. In 1885 the expenditures amounted to 25 cents per member; in 1900 to 62 cents, and in 1913 to $1.03, while in the postwar period the figures were $1.96 for 1925 and $3.12 for 1930. Of the total expenditures of the krankenkassen, the proportion coming under the head of hospital expenditures amounted finally to 15 per cent, or almost twice the proportion for the year 1885, which was 8.5 per cent. In 1930 the total amount expended by the German krankenkassen for hospital care and treatment was 297,500,000 marks ($70,805,000), or 15 per cent of their total expenditures. Hospital care was the second largest item under the head of material performances. Thus, the value of this service is being appreciated more and more. But it will be understood that the sponsors of health insurance, under the influence of the economic crisis, must consider whether they can continue to carry on the self-imposed task on the same broad scale as heretofore or whether they must accept far-reaching retrenchments as inevitable.

During a period of a little less than thirty years, the number of consultations per person more than doubled among the men, while among the women they are now nearly three and a half times what they were before. If one considers further what groups of patients among both sexes are most frequently treated in hospitals, a remarkable change is noticeable. During the period 1911-1913, in the German hospitals for patients with diseases of a physical nature, the most frequent cases among the men involved infectious diseases, while injuries came second, and diseases of the digestive organs, third. During the period 1925-1927, however, diseases of the digestive organs came first; then came infectious diseases, while injuries occupied third place. Similarly, among the women, during the prewar period, infectious diseases came first, diseases of the digestive organs second, and diseases of the urinary and reproductive organs, third (excluding venereal disease). During the period 1925-1927, on the other hand, diseases of the digestive organs occupied first place, as with the men; then came diseases of the urinary and reproductive organs, while the infectious diseases ranked third.

Injuries are among the most frequent causes of incapacity for work among the members of the krankenkassen. When such injuries become less frequent as a result of widespread unemployment, the number of members claiming aid on that score decreases. The leading place that diseases of the urinary and reproductive organs occupy among women is evidence for the fact that the need for institutional treatment of gynecologic disorders is given wide consideration by the krankenkassen. It will be seen that the German hospitals are dependent on the continued existence of an efficient sick benefit service. The close mutual relations between krankenkassen and public and private hospitals demand a hospital policy and a social system that will take account of these facts. Hospitals that are able to weather the storms of economic crises are possible only through intelligent cooperation of the sponsors of health insurance and the hospital administrations and are doubly needed so long as large portions of the population are forced to live under most wretched conditions.

## ITALY

*(From Our Regular Correspondent)*

Feb. 15, 1933.

### National Congress of Hygiene

The eighth Congresso nazionale di igiene was recently held at Rome, under the chairmanship of Prof. Dante De Blasi, director of the Istituto d'igiene at the University of Naples. The chairman said that the purposes of the association are the study and the promotion of hygiene. The association has supported scientific research by creating the "Sclavo prizes" with which to honor the more meritorious workers. The program of the society cannot be realized solely by the specialists in hygiene but requires the cooperation of all physicians, particularly family physicians, who can impart the achievements of hygiene to the mothers, who are most inclined to accept them for the protection of their children. Physical education is being cultivated in Italy on a large scale through the activities of the Opera nazionale ballilla. The speaker discussed the new water systems, the sanitation enterprises, hygienic improvements, and the instruments used in the crusade against endemic and social diseases.

Prof. Filippo Neri, of the University of Florence, spoke on the purification of waste waters. Professor Neri exhibited a film showing the purification plant of the city of Berlin. A resolution was adopted to the effect that every project for a new water system be accompanied by a plan for a sewer system and for the purification of waste waters, and that such projects be entrusted solely to persons who have acquired a specific competence at higher institutions or experimental stations.

Bari was chosen as the meeting place of the next congress, which will be held in 1934, and Professor De Blasi was elected president.

### A Large New Hospital at Milan

A large civilian hospital is under construction at Milan. It will have a capacity of 1,500 beds, 500 for medicine, 500 for surgery and 500 for the specialties. No ward will have more than six beds, while the wards will be grouped into sections of about thirty beds each. The elimination of porches on the ground floor, and the construction of balconies and galleries, will enable convalescents to be outdoors even on rainy days. The complete cost of the hospital is estimated at 65,000,000 lire ($3,412,500).

### Meeting of Medicosurgical Society

The Società medico-chirurgica of Bologna met recently under the chairmanship of Professor Ottolenghi. Professor Putti spoke on "transskeletal traction" by means of wire, and the treatment of fractures. This method, he said, is founded on the principle advanced by Codivilla and is merely a simplification in the method of applying traction. The wire, which is from 15 to 20 cm. long and from 1 to 2 mm. in diameter, is introduced into the skeleton by the transcutaneous route by means of an electrical perforator. The pressure on the wire is exerted from a metal rod to which a weight is attached. In fractures of the femur, the wire is fixed in the inferior lower femoral metaphysis; in fracture of the tibia it passes through either the malleoli or the metaphyseal region. In fractures of the humerus, the condyloid region or the olecranon is selected; in fractures of the forearm, the inferior radioulnar epiphysis. The heaviest weights used are 18 Kg. for the lower limb or 10 Kg. for the upper limb. In recent fractures, a traction device remains in place for from four to eight days.

### Convention of Catholic Physicians

About 200 Catholic physicians met recently in Florence to discuss subjects of a hygienic and moral nature. Professor Gemelli, rector of the Università cattolica, spoke on abortion. Professor Leoncini, of the University of Florence, spoke on induced sterility. Professor Pastori spoke on the eugenic significance and the compulsory features of the premarriage certificate, while Dr. Gedda of Turin considered sex education.

## VIENNA

*(From Our Regular Correspondent)*

March 14, 1933.

### The Susceptibility of Tumors to Radiation

Addressing recently the Medicinisches Doktoren-Kollegium, Dr. Borak discussed "The Susceptibility of Tumors to Radiation." He considered only the behavior of primary tumors, with especial reference to the complete disappearance of the neoplasm. Probably all tissues may be influenced by roentgen or radium irradiation, but most of them are damaged only in a qualitative sense (degeneration) or quantitative sense (atrophy), and in only a few is a complete anatomic destruction brought about. A malignant tumor has always the same or a greater susceptibility to radiation than its mother-tissue. If a given tumor is derived from a tissue in which a complete destruction is possible, then a complete destruction of the tumor itself can be effected. Such tumors may be termed "susceptible to irradiation by nature." To this class belong tumors of the testis, tumors of the ovary, derived from the ovarian follicles; the lymphosarcomas; the tricho-epitheliomas from the hair follicles; the cutaneous epitheliomas from the epidermis; the carcinomas, which arise from the mucous membranes covered with flat-celled epithelium (the lips, buccal cavity, upper air passages, portio uteri). Only such tumors can entirely disappear, if they are irradiated with quantities of energy sufficient to destroy their initial tissues. All other

tumors, such as adenocarcinomas, sarcomas and gliomas, as well as their mother-tissue, can be damaged only to a varying extent. A complete destruction of "tumors unsusceptible by nature to irradiation" can be accomplished only if they are either (1) absolutely anaplastic; that is to say, if they are entirely different from the nature of their mother-tissue; or (2) in the event of metaplasia into a more favorable type, from the radiologic point of view; for example, if, in the urinary passages, a transformation of the epithelium into a flat-celled epithelium occurs and then a pavement-epithelium carcinoma develops. In applying irradiation, the quantity of energy must be so chosen that the connective tissue does not suffer. In the case of pavement-epithelium tumors, that is easy to accomplish. Glandular epithelium cannot be entirely destroyed without causing necrosis of the connective tissue. Hence, by the application of roentgen rays, glandular tumors cannot be diminished in size and checked in their growth unless one is prepared to risk extensive necroses.

### Death of Leopold Moll

The pediatrician Prof. Dr. Leopold Moll has been taken away unexpectedly, in the midst of his work, at the age of 56. As a young physician, Moll attracted attention owing to his unusual powers of comprehension and broad knowledge in medical chemistry. Born in Prague, he attended the university in that city and was called by Professor Ebstein to serve as assistant in the Säuglingsklinik. In 1909 he was summoned to Vienna by Professor Escherich, where he organized the Reichs-Anstalt für Mütter- und Säuglingsfürsorge. By the admission of both mother and child, Professor Moll promoted the idea of breast-feeding. He disseminated the knowledge of infant feeding among the physicians, nurses and the public. From all directions, physicians came to this institute. Medicine is indebted to him for the creation of numerous consultation centers for mothers and for prenatal care. The organization of the movement to provide after-care for convalescent children was his work. More than 25,000 children are indebted to this institution for the recovery of health. He devoted himself especially to tuberculosis, rickets and nervousness in children. He became a leading physician in his field through numerous courses of instruction for mothers, through lectures on nutrition, care and education of sick and healthy children, and by his textbooks, particularly his "Merkbuch für Mütter." Of his more important scientific publications may be mentioned studies on the various foods for infants, pathology and treatment of pyloric spasm, and relation of climate to diseases of children.

### Research on the Hearing of Fish

At a recent session of the Gesellschaft der Aerzte in Vienna, Prof. Karl Ritter von Frisch of Munich presented a paper giving an account of his research on the hearing of trained fish. The tympanic membrane and the middle ear, together with the ossicles, are absent in the fish, but many species have one ossicle (Weber's ossicle), which unites the air bladder with the inner ear, and, from the functional point of view, is comparable to the auditory ossicles in mammals. The elimination of this apparatus, as von Frisch was able to show, causes hardness of hearing. In the inner ear of fish, the cochlea and the basilar membrane are wanting, but there is a labyrinth with utricle, saccule and lagena. The old controversy as to whether fish can hear has always awakened interest. Von Frisch trained sheatfish and minnows, and was able to demonstrate that both species react readily to tones; in other words, that they hear. The upper audible limit for the minnow is about 7,000 vibrations in a second, and in dwarf sheatfish about 13,000 vibrations per second. It can be demonstrated that fish are able to distinguish high-pitched tones from one another and even to retain them in the memory, but generally they could not distinguish an interval of less than eight tones (an octave), although, in some instances, an interval of three tones was distinguished. In fish, the utricle and the superior semicircular canal play no direct part in audition; they possess only dynamic and static functions. On the other hand, the posterior semicircular canal (saccule and lagena) constitutes the auditory organ in the minnow. The low-pitched tones (below about 120 vibrations) are perceived also through the skin. With regard to acuity and range of audition, the ear of the ordinary fish has the same capacity as that of man. The significance of the basilar membrane, which is found developed in the vertebrates beginning with the Amphibia, lies doubtless in the fact that it permits a delicate differentiation of tones. The experiments were carried out chiefly by training the fish to react to certain sounds, the fish learning to recognize, among other sounds, a certain tone as the "feeding-time tone." Even after removal of the utricle, the fish reacted to the sound of the feeding-time tone by dashing off through the water but without preserving any definite direction. Von Frisch was able to show that the sound waves act first on the gas-filled air bladder and then are transmitted through Weber's ossicle to the fluid of the labyrinth.

### Conservative Treatment of Severe Arm Injuries

By precise application of modern principles of surgical therapy, it is frequently possible to heal (with preservation of function) severe injuries of the upper extremities, which formerly were treated only by amputation. This phase of surgery was discussed before the Gesellschaft der Aerzte by Dr. Ehalt of the Arbeiter Unfall-Spital and Dr. Oppolzer of the Chirurgische Klinik. In a case cited, the left lower arm of a man aged 31 was caught in a cogwheel. The forearm was torn through, leaving only a strip of skin 3 cm. wide, while the vessels and nerves remained intact. It was, as commonly viewed, a case for amputation; for a single stroke of the shears would have constituted the whole operation. However, the wound was carefully cleansed, and only the skin was sutured. No sutures were applied to the bones, the fascia or the muscles. The limb was then immobilized in an unpadded plaster cast, in an elevated position and with open treatment of the wound. No gas gangrene serum was given. Not until two months later, after the skin had become completely intact, were the bones sutured. In a second case, the patient's right arm had been run over by a vehicle. The skin about the bend of the elbow was torn loose circularly for a stretch of 20 cm.; there was a wide opening of the joint and the muscles arising at the lower end of the humerus were torn loose, while the vessels and nerves projected unprotected through the wound. This injury was treated in accordance with the method of Friedrich; that is, it was carefully excised and after insertion of six drains only the skin was sutured; which was followed by immobilization in a plaster cast, elevated position, and open treatment of the wound. At the end of three months, the patient, whose wound healed by first intention, was able to resume his occupation as truck driver and was able to perform well all his duties. The third case concerned a coachman, aged 68, whose injury was almost identical with case 2. At the end of two months, he was already able to perform all his duties. In spite of his advanced age and poor vascularization, the Friedrich method gave good results. The essential features of the method are to cut and pare away all contused and contaminated tissues, including the recesses of the wound, and then to suture only the skin; no foreign substance is put into the wound; no sutures are applied to the bones, fascia or muscles, and open wound treatment is carried out, with most precise immobilization. It is emphasized that the care of a wound is not a matter of chemistry or serology but a purely surgical undertaking, which, to be sure, requires the expenditure of from two to three hours, but the rewards are great. In a fourth case of severe injury, presented by

Dr. Oppolzer, the patient had suffered, eighteen months previously, a severe laceration of the right elbow joint. The biceps tendon, the radial and ulnar muscle groups, the brachial muscle, the median nerve, the radial nerve and the cubital artery were severed; the joint was opened on the flexor surface; the head of the radius was detached; only the ulnar nerve was intact, though visible on the flexor surface. The lower arm had no further attachments than a posterior span of skin and the triceps tendon of the upper arm. An attempt was made to save the lower arm by means of a vessel suture. The cubital artery was sutured; likewise the joint, the muscles, the biceps tendon and the two severed nerves (median and radial). Coaptation and suturing of the severely lacerated muscles and nerves presented many technical difficulties. At the end of six months, the arm could be readily flexed at the elbow, while the disturbance of sensation was greatly improved. Now, after eighteen months, the patient's condition approaches normal. There is still a slight hindrance of pronation and supination; otherwise the forearm and hand present in all parts normal pulse and sensation, and also motility. Also this case shows clearly that by consistent and precise work on a strictly surgical basis, and the application of conservative methods, most astonishing, favorable results can and must be secured.

## TURKEY

*(From Our Regular Correspondent)*

Ankara, March 21, 1933.

### Narcotic Prescriptions

The question of writing prescriptions for narcotics has again come to the attention of the ministry of health. The accounts of narcotics dispensed by pharmacies reveal the necessity of closer restrictions. It was decided at the last session of the health council to fix the maximum amount of narcotics a physician may prescribe; henceforth the dose prescribed is not to surpass half the amount of the maximum dose of any drug and it may not be prescribed for more than five days. With the exception of codeine and ethylmorphine hydrochloride, for which the pharmacist does not need to account, all narcotics listed by the ministry of health come under this decision; they are opium, opium salts and extracts, pantopon and its derivatives and all preparations containing it, all preparations containing more than 0.2 per cent of morphine and its salts with the exception of tincture of opium and powder of ipecac and opium, all preparations containing more than 0.2 per cent of diacetylmorphine and its salts, or more than 0.1 per cent of cocaine or its salts, tropacocaine and its preparations, hasheesh extract and all preparations and derivates of dicodid, dilaudid, eucodeine and ecgonine.

### Institutions for the Tuberculous

The pressing need for beds for the tuberculous has hastened the establishment of a new sixty-bed pavilion at the tuberculosis sanatorium at Halki, in the Sea of Marmora near Istanbul. The continued economic stress with its increase in tuberculosis has resulted in an enormously long waiting list for admission to the government sanatorium, which was established in 1924. The Istanbul society for the prevention of tuberculosis, in cooperation with the Red Crescent society, has opened a fifty bed sanatorium in Erenköy, where there is a fee of $1.25 a day for private patients. One hundred beds have been set aside for the tuberculous at the Istanbul-Haydar Pasha and fifty beds at the Izmir Hospital for contagious diseases, and the Istanbul municipality has recently opened an eighty bed pavilion for the treatment of open cases. The ministry of education, which operates a preventorium in Istanbul, has recently increased the number of beds to 150. There are two private sanatoriums with fifty and twenty-five beds on other islands in the Sea of Marmora. In 1923 there were 7,312 hospital beds in Turkey; today there are more than 12,000, or 0.85 per thousand of population, representing an increase of 63.6 per cent. Though the number of beds for the tuberculous has been increased to 470, this number is far from adequate. The tuberculosis death rate for thirty-three cities with a combined population of almost 2,000,000 is more than 200 per hundred thousand. It is evident that for a successful tuberculosis campaign there is an urgent need for an addition of at least 2,000 more hospital beds and the establishment of a number of preventoriums, sanatoriums and tuberculosis dispensaries. The Istanbul municipality plans for the erection of a 300 bed tuberculosis hospital. There being no tuberculosis hospitals in Anatolia, the ministry of health and the ministry of national defense plan for the erection of sanatoriums there as soon as economic conditions permit.

### Personnel of the Ministry of Health

The ministry of health and social assistance, which is responsible for the appointment of the medical personnel of the government, in 1931 had in its employ 1,103 physicians, 113 pharmacists, 1,214 sanitary inspectors, 431 midwives, 221 nurses, and 515 clerical and other employees, totaling 3,597 persons. The salaries for these persons comes from three sources, the national government, the provincial government and the municipalities. Of the total, the national government provided for the salaries of 583 physicians, 17 pharmacists, 977 sanitary inspectors, 37 midwives, 56 nurses, and 278 clerical and other employees, a total of 1,948 persons. As a result of declining budgets some municipalities have restricted the number of health officers and midwives; others have tried to do without either the physician or the midwife or both; others are trying to compromise by procuring for a small fee the service of a physician. There are therefore a great number of vacancies in the health departments.

### The Income Tax in Turkey

Previous to 1926, physicians in Turkey were exempt from taxes; then a law was passed by which physicians, pharmacists, dentists, veterinarians, chemists, lawyers and so on were required to file returns. The physician is entitled to deduct from his gross income his office rent, expenditures for office maintenance, such as heating, lighting, telephone, correspondence, advertising, insurance and the service of attendants, also medical supplies, subscriptions for journals and amounts expended on books, and other taxes imposed on physicians. Dues to professional societies are not deductible, nor is expense incurred in postgraduate study nor the expense of traveling to medical meetings either at home or abroad. Indispensable expenditure not being defined, this item has been a source of friction between the tax collector and the physician who holds that traveling expenses are indispensable, as when he is to testify at court. Taxpayers required to file returns must do so in the Turkish language and must have the bills and receipts verified by a notary public and keep for three years all accounts, bills and receipts for inspection by an officer who at any time may demand to see them. The government estimates the income and augments the taxes by 20 per cent of persons who fail to keep books properly or to present bills and receipts. The rate of tax is 12 per cent up to the first 5,000 pounds ($2,500) of net income, 15 per cent on a net income from 5,001 to 10,000 pounds, 20 per cent on a net income from 10,001 to 20,000 pounds, 25 per cent on a net income from 20,001 to 50,000 pounds, and 30 per cent on a net income from 50,001 pounds upward.

According to the 1926 law, midwives and nurses in communities with a population of less than 5,000 are exempt from taxes, as are private hospitals for the treatment of the insane and private tuberculosis sanatoriums.

A bill has been introduced into the national assembly to amend the law by replacing the filing of returns by two kinds of taxes, the first to be a fixed tax on all physicians, the second

a tax fixed according to the income of the physician, the amount of this income to be estimated by the government according to the size of the city, the amount of the office rent and the professional standing of the physician. Istanbul physicians are not in favor of the amendment, maintaining that it would work a hardship on the physician who becomes incapacitated by sickness or who goes abroad to study. It would not be fair to the younger men, as the long established physician's office rent might be about the same while his income may be ten times as high.

## PRAGUE

*(From Our Regular Correspondent)*

March 27, 1933.

### The Centenary of Czech Medical Terminology

Czech medicine celebrated recently a modest but significant anniversary, the centenary of the Czech medical terminology. The person responsible for this important development was Anthon Jungmann, a Prague obstetrician well known in his time. The elaboration of a local terminology strengthened the cultivation of medicine among Czech authors. Jungmann used for this purpose a vocabulary containing more than 13,000 terms, based partly on popular terminology for the designation of diseases and symptoms, partly on new words, which have been taken over to a surprising degree into modern Czech terminology. Because the German terminology was most popular among the local physicians, Jungmann attached to his work another vocabulary translating German medical terms into his new vocabulary. This work must be regarded as one of the most important contributions to the development of Czech medicine, for it culminated in the establishment of the Czech medical faculty in Prague in 1882.

### Prof. Karl Kreibich Is Dead

Prof. Dr. K. Kreibich, chief of the dermatological department of the Prague German Faculty, who died recently, was born in 1869 in a suburb of Prague. He worked with Professor Weichselbaum in Vienna and started his dermatologic career with the dermatologist Professor Kaposi. In 1908 he was nominated to the chair of dermatology on the German Medical Faculty of Prague after the death of the dermatologist Prof. P. J. Pick, where he remained until his death. He was an authority and at the same time unusually popular. In 1912 he was elected dean of the German Medical Faculty of Prague and in 1923 served as a rector of the whole university. He was well known at international dermatologic meetings, where he was many times a brilliant speaker. He was for years president of the German Dermatologic Association of Prague and chairman of the German Association for Combating Venereal Diseases in Czechoslovakia, also an associate editor of the *Archiv für Dermatologie*. He wrote more than 200 scientific papers. He was especially popular with the students because he was well versed in all matters of art. He was a successful writer of several comedies and novels, as well as a painter. In his premature death, Prague has lost one of its most prominent personalities.

### Conference on Preventive Medicine

The third Conference of Preventive Medicine, held in the Tatra Mountains, February 10-13, had an attendance of about 120, including foreign guests from Poland and Yugoslavia. The conference was divided into two sections. The first section discussed methods of cooperation between the private practitioner and public health institutions, such as dispensaries and consulting stations. The second section considered the ways and means for the introduction of modern methods into the campaign against infectious diseases. A resolution was passed advocating the modernization of the present law on infectious diseases and the creation of a school of hygiene for the education of public health administrators.

## Marriages

WILLIAM F. ENGLEBERT, JR., to Miss Virginia Block, both of Fort Wayne, Ind., in Tuscaloosa, Ala., January 24.

WILLIE KERNS DIX, Richmond, Va., to Miss Avis Clifford Mathews of Atlanta, Ga., February 25.

EARLE RAWLINGS WARE, Fredericksburg, Va., to Miss Jane Tuggle Epes of Richmond, March 11.

CHARLES P. ROBBINS, Winona, Minn., to Miss Helen Diefendorf of Ionia, Mich., recently.

TOMAS R. YANES, Havana, Cuba, to Miss Manuelita R. Argüelles, Baracoa, January 23.

BENJAMIN WASCOWITZ to DR. MARIE PICHEL LEVINSON, both of New York, March 9.

STEPHEN A. HARRIS, Steubenville, Ohio, to Miss Madeline Gordon of Bellaire, recently.

NORTON E. WINNARD to Miss Mamie Harrell, both of Eugene, Ore., in February.

STANLEY D. SIMON to Miss Cecile Freiberg, both of Cincinnati, April 2.

## Deaths

**William Easterly Ashton,** Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1881; Jefferson Medical College of Philadelphia, 1884; professor of gynecology, Graduate School of Medicine of the University of Pennsylvania; for many years professor of gynecology, Medico-Chirurgical College of Philadelphia; fellow of the American College of Surgeons; was awarded the Distinguished Service Cross for heroism in the World War; author of "Essentials of Obstetrics" and "The Practice of Gynecology"; aged 73; died, March 29, of pneumonia.

**John William Young,** Grenada, Miss.; Medical Department of the University of Louisiana, New Orleans, 1869; member and past president of the Mississippi State Medical Association; member of the House of Delegates of the American Medical Association, 1910-1912; Civil War veteran; at one time city and county health officer; aged 86; died, February 15, of carcinoma of the prostate.

**Moe Robinson,** Elizabeth, N. J.; College of Physicians and Surgeons, Baltimore, 1908; member of the Medical Society of New Jersey; on the staffs of the Elizabeth General Hospital, St. Elizabeth's Hospital and Alexian Brothers' Hospital; aged 47; died, March 13, in a hospital at Havana, Cuba, of bronchopneumonia, which developed following sunburn.

**Clayton Abraham Mentzer** ✪ Hillside, N. J.; Hahnemann Medical College and Hospital of Philadelphia, 1914; health officer; aged 47; on the staffs of the Newark (N. J.) City Hospital, Alexian Brothers' Hospital and the Elizabeth General Hospital, Elizabeth, where he died, March 19, of injuries received when struck by an automobile.

**George Harrison Nixon,** Washington, D. C.; Middlesex College of Medicine and Surgery, Cambridge, Mass., 1921; Georgetown University School of Medicine, Washington, 1929; aged 37; on the staff of the Gallinger Municipal Hospital, where he died, March 9, of perforated peptic ulcer and bronchopneumonia.

**Charles George Tilden,** Kalona, Iowa; Marion-Sims College of Medicine, St. Louis, 1899; Medical Department of Drake University, Des Moines, 1900; member of the Iowa State Medical Society; aged 60; died, March 17, at Rochester, Minn., of carcinoma of the sigmoid and bronchopneumonia.

**George Hooper Mallett,** Hendersonville, N. C.; University of Virginia Department of Medicine, Charlottesville, 1885; fellow of the American College of Surgeons; formerly consulting gynecologist to the General Memorial Hospital, New York; aged 69; died, March 22, of heart disease.

**Leonard James Turlington,** Baltimore; University of Maryland School of Medicine, Baltimore, 1892; member of the Medical and Chirurgical Faculty of Maryland; aged 77; died, March 3, in the South Baltimore General Hospital, of injuries received in an automobile accident.

**D. Clinton Guthrie,** Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1891; member of the Medical Society of the State of Pennsylvania; on the staff of the American Hospital for Diseases of the Stomach; aged 70; died, March 31, of heart disease.

**Wilmer Lambert Dickerson,** Long Beach, Calif.; Rush Medical College, Chicago, 1893; member of the California Medical Association; formerly professor of therapeutics and materia medica, Barnes Medical College, St. Louis; aged 77; died, March 23, of heart disease.

**Clifton Alembe Howell,** Oklahoma City; Medical Department of the Tulane University of Louisiana, New Orleans, 1911; member of the Oklahoma State Medical Association; served during the World War; aged 58; died, March 17, of arteriosclerosis and heart disease.

**Frank Dewey Bishop,** Denver; University of Colorado School of Medicine, Denver, 1924; member of the Colorado State Medical Society; served during the World War; aged 36; died, March 19, in the Mercy Hospital, of myocarditis and exophthalmic goiter.

**William Samuel Bushnell** ✠ Mansfield, Ohio; College of Physicians and Surgeons in the City of New York, Columbia University, 1893; at one time county coroner; formerly on the staff of the Mansfield General Hospital; aged 64; died, March 21, of myocarditis.

**Frank Martin Brooks** ✠ Portland, Ore.; University of Oregon Medical School, Portland, 1890; Jefferson Medical College of Philadelphia, 1895; formerly mayor, and member of the school board in Silverton; aged 64; died, January 30, of heart disease.

**George Hamlin Washburn** ✠ Boston; Harvard University Medical School, Boston, 1886; professor of obstetrics, emeritus, Tufts College Medical School; aged 72; died, March 28, in the Massachusetts General Hospital, of retroperitoneal hemorrhage.

**Elmer Louis Boyd,** Evansville, Ind.; Rush Medical College, Chicago, 1924; member of the Indiana State Medical Association; on the staffs of St. Mary's and Deaconess hospitals; aged 43; died, March 27, of pneumonia and cerebral hemorrhage.

**Thomas Zelinsky** ✠ Battle Creek, Mich.; University of Michigan Medical School, Ann Arbor, 1901; formerly mayor of Battle Creek; aged 56; on the staff of the Nichols Memorial Hospital, where he died, February 26, of cerebrospinal meningitis.

**Orville Edson Johnson** ✠ Winthrop, Mass.; Harvard University Medical School, Boston, 1894; on the staffs of the Winthrop (Mass.) Community Hospital and the Whidden Hospital, Everett; aged 65; died, March 16, in a hospital at Boston.

**Alice Catharine Youmans,** Delhi, N. Y.; Woman's Medical College of the New York Infirmary for Women and Children, 1899; aged 55; died, January 6, in the Mary Imogene Bassett Hospital, Cooperstown, of erysipelas following influenza.

**David Harris Walker,** Tuscumbia, Ala.; Vanderbilt University School of Medicine, Nashville, Tenn., 1882; member of the Medical Association of the State of Alabama; bank president; aged 68; died suddenly, March 11, of heart disease.

**Harry D. Squair,** St. Johns, Mich.; Michigan College of Medicine and Surgery, Detroit, 1897; member of the Michigan State Medical Society; formerly health officer of St. Johns; aged 59; died, March 18, of heart disease and diabetes mellitus.

**Alexander Benjamin Sambola,** New Orleans; University of the South Medical Department, Sewanee, Tenn., 1904; aged 54; was found dead in bed, February 23, of coronary sclerosis, pulmonary tuberculosis, cirrhosis of the liver and nephritis.

**John Pollard La Barre,** Ottawa, Ill.; University of Maryland School of Medicine, Baltimore, 1901; veteran of the Spanish-American War; aged 55; died, March 8, in the Jackson Memorial Hospital, Miami, of cerebral hemorrhage.

**Zorah Elon Patrick,** Winnetka, Ill.; Rush Medical College, Chicago, 1872; Bellevue Hospital Medical College, New York, 1877; aged 82; died, March 6, at the North Shore Health Resort, of myocarditis and bronchopneumonia.

**George W. Hinchee,** Oklahoma City; Baltimore Medical College, 1894; St. Louis College of Physicians and Surgeons, 1895; member of the Oklahoma State Medical Association; aged 73; died, March 11, of hypostatic pneumonia.

**Martin James Larkin** ✠ Toledo, Ohio; St. Louis University School of Medicine, 1919; on the staff of the Mercy Hospital; aged 39; died, March 11, of brain abscess following a wound received last July when shot by a robber.

**Young Allen Little,** Milledgeville, Ga.; Atlanta College of Physicians and Surgeons, 1905; past president of the Baldwin County Medical Society; served during the World War; aged 54; died, March 15, of cerebral hemorrhage.

**Charles S. Drury,** Natural Bridge, N. Y.; University of Vermont College of Medicine, Burlington, 1879; member of the Medical Society of the State of New York; aged 76; died, March 18, of carcinoma of the prostate.

**Stuart Scott,** Newmarket, Ont., Canada; Faculty of Medicine of Trinity College, Toronto, 1885; for many years medical officer of health of Newmarket; formerly member of the board of education; aged 72; died, January 4.

**Thomas Jefferson Partridge,** Cambridge, Mass.; Boston University School of Medicine, 1889; member of the Massachusetts Medical Society; aged 72; died, February 26, of bronchopneumonia and arteriosclerosis.

**Thomas Jefferson Stephenson, Jr.,** Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1931; aged 24; intern at the Children's Hospital, where he died, March 11, of streptococcic peritonitis.

**Charles Ogden Truscott,** Cisne, Ill.; Miami Medical College, Cincinnati, 1886; member of the Illinois State Medical Society; formerly village president and postmaster; aged 71; died, February 27, of arteriosclerosis.

**Frank Wright Davis,** Adams, Minn.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1903; served during the World War; aged 56; died, January 13, of carcinoma of the sigmoid and liver.

**William Potter Shaw** ✠ Berlin, Pa.; University of Maryland School of Medicine, Baltimore, 1893; aged 66; died, March 13, in the Memorial Hospital, Cumberland, Md., of chronic nephritis and myocarditis.

**Edgar Hunt Guild** ✠ Springfield, Mass.; University of Pennsylvania School of Medicine, Philadelphia, 1882; formerly member of the board of health; aged 80; died suddenly, March 22, of chronic myocarditis.

**Manning L. Allen** ✠ Tama, Iowa; College of Physicians and Surgeons, Chicago, 1893; past president of the Tama County Medical Society; aged 70; died, March 11, of angina pectoris and coronary thrombosis.

**John Mills Young,** Little Rock, Ark.; Medical Department of Arkansas Industrial University, Little Rock, 1895; formerly county coroner; aged 66; died, March 1, of cerebral hemorrhage and arteriosclerosis.

**James H. Lindsey,** Bentonville, Ark.; Medical Department of Arkansas Industrial University, Little Rock, 1884; member of the Arkansas Medical Society; aged 71; died, February 2, of angina pectoris.

**Frederick C. Ameiss,** St. Louis; Missouri Medical College, St. Louis, 1882; member of the Missouri State Medical Association; aged 74; died, March 19, of pernicious anemia and carcinoma of the stomach.

**William Henry Harrison Anthony,** Plainfield, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1903; on the staff of the Muhlenberg Hospital; aged 53; died, March 15, of heart disease.

**Oscar Sprissler,** Philadelphia; Jefferson Medical College of Philadelphia, 1892; aged 66; died, March 19, in the Northeastern Hospital, of diabetes mellitus, intestinal obstruction and carcinoma of the spleen.

**Thomas William Scanlon** ✠ Polo, Mo.; Medico-Chirurgical College of Kansas City, 1905; also a druggist; aged 65; was killed, March 15, when the automobile in which he was driving was struck by a train.

**Luther Elonzo Wheat,** Lewisburg, Tenn.; University of Nashville Medical Department, 1911; physician and owner of the Wheat Hospital; aged 50; died, March 11, of a self-inflicted bullet wound.

**Julian T. McLamore,** Megargel, Texas; University of Texas School of Medicine, Galveston, 1897; veteran of the Spanish-American War; aged 57; died, February 6, of influenza and myocarditis.

**Benjamin Edward Hedding,** National Home, Wis.; University of Pennsylvania School of Medicine, Philadelphia, 1899; aged 59; died, March 17, in Long Beach, Calif., of coronary thrombosis.

**Emory Ford McSherry,** Dayton, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1910; member of the Ohio State Medical Association; aged 49; died, March 14, of heart disease.

**Leeland W. Briggs,** Toledo, Ohio; Toledo Medical College, 1892; member of the Ohio State Medical Association; for eight years police surgeon; aged 62; died, March 17, of coronary occlusion.

**G. Gilmer Brenizer,** Washington, D. C.; George Washington University Medical School, Washington, 1903; aged 68; died, March 16, of illuminating gas poisoning, presumably self administered.

**Benjamin Moore Stephenson,** Peoria, Ill.; Medical College of Ohio, Cincinnati, 1885; aged 75; died, March 12, in the John C. Proctor Hospital, of cerebral hemorrhage and arteriosclerosis.

**Willard W. Hills,** Colorado Springs, Colo.; Denver College of Medicine, 1885; associate member of the Colorado State Medical Society; aged 71; died, March 15, of cerebral arteriosclerosis.

**Leon Clive Havens** ✠ Montgomery, Ala.; Harvard University Medical School, Boston, 1918; director of laboratories of the state board of health; aged 41; died, March 19, of heart disease.

**Thomas L. McCloy,** Wilkinsburg, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1905; aged 52; died, March 13, in the Providence Hospital, Beaver Falls, of carcinoma of the rectum.

**Eugene E. Webster,** Woodhull, N. Y.; College of Physicians and Surgeons, Baltimore, 1882; county coroner; member of the board of education; aged 76; died, March 15, of bronchial asthma.

**Cuthbert S. Wigg,** Boonton, N. J.; Bellevue Hospital Medical College, New York, 1880; member of the Medical Society of New Jersey; aged 76; died, March 2, of carcinoma of the colon.

**Thomas Clarence Dodds,** Hartford City, Ind.; Eclectic Medical Institute, Cincinnati, 1898; for six years member of the board of education; aged 57; died, March 13, of coronary thrombosis.

**Isaac N. Roberson,** Nancy, Texas; Baylor University College of Medicine, Dallas, 1905; member of the State Medical Association of Texas; aged 67; died, January 1, of heart disease.

**S. Merrill Tilson** ✠ Indianapolis; Indiana Medical College, School of Medicine of Purdue University, Indianapolis, 1906; aged 56; died, March 22, of acute myocarditis and renal colic.

**John P. Aloysius McParlan** ✠ New York; Bellevue Hospital Medical College, New York, 1891; on the staff of St. Francis Hospital; aged 65; died, March 19, of pneumonia.

**Howard Ethanon Whitney,** Otsego, Mich.; Hahnemann Medical College and Hospital, Chicago, 1895; served during the World War; aged 59; died, March 11, of heart disease.

**Elmer Henry King,** New York; Medical School of Maine, Portland, 1913; on the staff of the New York City Cancer Institute Hospital; aged 54; died, March 15, of heart disease.

**Robert Hooper Smith** ✠ Baltimore; Johns Hopkins University School of Medicine, Baltimore, 1924; aged 35; died, March 5, in the Union Memorial Hospital, of lobar pneumonia.

**John George Rohrig** ✠ Davenport, Iowa; State University of Iowa College of Medicine, Iowa City, 1909; aged 49; died, March 25, in the Mercy Hospital, of perforated gastric ulcer.

**George Frederick Yates,** Chicago; Rush Medical College, Chicago, 1888; aged 69; died, March 23, in the Wesley Memorial Hospital, of injuries received in an automobile accident.

**Samuel N. Schneider,** Evanston, Ill.; Chicago Homeopathic Medical College, 1880; member of the Illinois State Medical Society; aged 75; died, March 16, of myocarditis.

**Earl Lee Overholt,** Fostoria, Ohio; Rush Medical College, Chicago, 1898; member of the Ohio State Medical Association; aged 63; died, March 15, of angina pectoris.

**Leon H. Mayo,** Birmingham, Ala.; Medical Department of the University of Alabama, Mobile, 1906; aged 50; died, March 12, in the Hillman Hospital, of brain tumor.

**George E. Muns,** Montgomery City, Mo.; University of Missouri School of Medicine, Columbia, 1880; formerly postmaster; aged 76; died, March 17, of myocarditis.

**Samuel Mason,** Pennville, Ind.; Indiana Medical College, Indianapolis, 1873; Civil War veteran; formerly bank president; aged 88; died, March 16, of heart disease.

**Henry Stuart Krug,** St. Louis; Trinity Medical College, Toronto, Ont., Canada, 1895; aged 60; died, March 20, of cerebral hemorrhage, while visiting in Detroit.

**Robert R. Teller,** Miami, Fla.; Victoria University Medical Department, Coburg, Ont., Canada, 1881; aged 77; died, January 19, of chronic nephritis and uremia.

**Stephen Johnson D. Meade,** Fort Thomas, Ky.; Pulte Medical College, Cincinnati, 1885; aged 75; died, March 15, of cerebral hemorrhage and arteriosclerosis.

**Jonas Risting Nannestad,** Albert Lea, Minn.; University of Christiania, Norway, 1890; aged 68; died, March 12, of acute dilatation of the heart and influenza.

**Mary Campbell McIntyre** ✠ Kalamazoo, Mich.; University of Michigan Medical School, Ann Arbor, 1925; aged 40; died, March 13, of pulmonary tuberculosis.

**Josiah J. Schrock,** Greentown, Ind.; Medical Department of Western Reserve University, Cleveland, 1887; aged 77; died, March 10, in Gary, of pneumonia.

**Robert Hall Moore,** Trenton, N. J.; Kentucky School of Medicine, Louisville, 1894; aged 63; died, March 14, of coronary thrombosis and arteriosclerosis.

**Horace Robert Hawkins,** Xenia, Ohio; Homeopathic Hospital College, Cleveland, 1892; aged 60; was found dead in bed, March 15, of heart disease.

**William Joseph Nesbit,** Detroit; Western University Faculty of Medicine, London, Ont., Canada, 1913; aged 44; died in March, of heart disease.

**Fred Goldfrank,** Darien, Conn.; Columbia University College of Physicians and Surgeons, New York, 1903; aged 55; died, March 13, of heart disease.

**Henry Everard Barr,** New Wilmington, Pa.; Jefferson Medical College of Philadelphia, 1900; aged 60; died suddenly, March 12, of heart disease.

**Elijah J. Post,** Benton Harbor, Mich.; Hahnemann Medical College and Hospital, Chicago, 1891; aged 77; died, March 2, of cerebral hemorrhage.

**James Henry Voris,** Conway, Ark.; University of Arkansas School of Medicine, Little Rock, 1901; aged 55; died, February 7, of heart disease.

**David W. Ogden,** Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1892; aged 72; died, March 9, of endocarditis.

**Wilber Laurin Hutchison,** Easton, Pa.; Jefferson Medical College of Philadelphia, 1923; aged 35; died, March 20, of a self-inflicted wound.

**Otis B. Salley,** Augusta, Ga.; University of Georgia Medical Department, Augusta, 1879; aged 77; died, March 2, of myocarditis and nephritis.

**Cullen Bryant Maxson,** Jersey City, N. J.; Cornell University Medical College, New York, 1904; aged 54; died, March 27, of pneumonia.

**Nils Omsted,** Stoughton, Wis.; University of Christiania, Norway, 1883; aged 73; died, February 28, in the Community Hospital, of pneumonia.

**Charles J. Parris,** Newcastle, Texas; Memphis (Tenn.) Hospital Medical College, 1909; aged 55; died, March 7, in a sanatorium at Olney.

**Valorous A. Thomas,** Nelson, Neb.; Jefferson Medical College of Philadelphia, 1897; aged 76; died, January 17, of cerebral hemorrhage.

**Charles Edmund Scullin** ✠ Peoria, Ill.; Rush Medical College, Chicago, 1903; aged 54; died suddenly, March 23, of angina pectoris.

**George Newton Powell,** Laketon, Texas; Missouri Medical College, St. Louis, 1883; aged 74; died, Dec. 9, 1932, of diabetic gangrene.

**Nelson Holland Young,** Canandaigua, N. Y.; Medical College of Ohio, Cincinnati, 1896; aged 58; died, January 10, of heart disease.

**Thomas Henry Line,** Grafton, Neb.; Rush Medical College, Chicago, 1881; aged 74; died, February 25, of cerebral hemorrhage.

**Ephraim Lutz Shumaker,** Louisville, Ill.; Miami Medical College, Cincinnati, 1881; aged 74; died, March 1, of cerebral hemorrhage.

**James Edgar Townsley,** Cincinnati; Columbus Medical College, 1889; aged 76; died, February 6, of cerebral hemorrhage.

**Hans Rasmussen** ✠ Milwaukee; Jefferson Medical College of Philadelphia, 1896; aged 65; died, March 15, of coronary thrombosis.

**Harry Hayford Colburn** ✠ Boston; Medical School of Maine, Portland, 1895; aged 61; died, March 12, of chronic nephritis.

**Thomas Vaden Brooke,** Sutherlin, Va.; Medical College of Virginia, Richmond, 1872; aged 88; died, March 12, of senility.

**Daniel Iverson Dahl,** Becker, Minn.; Fort Wayne (Ind.) College of Medicine, 1898; aged 68; died, March 14, of heart disease.

**George P. Norton,** Tampa, Fla.; Meharry Medical College, Nashville, Tenn., 1897; aged 67; died, February 8, of endocarditis.

# Correspondence

## USE OF CARBON DIOXIDE IN ANESTHESIA

*To the Editor*:—I am wondering whether your reply to a question as to the toxicity of carbon dioxide in Queries and Minor Notes (THE JOURNAL, February 18, p. 519) is entirely safe. In 1829, Hickman reported experiments in which he had put animals into a state of unconsciousness during which they were insensitive to surgical trauma, by exposure to the gas evolved when sulphuric acid was added to carbonate of lime. Paul Bert (La pression barométrique, Paris, 1878) wrote: "Small animals exposed to varying percentages of carbon dioxide in the presence of 'ample oxygen' do not die until concentrations of 30 per cent are reached." Haldane and Smith (The Physiological Effects of Air Vitiated by Respiration, *J. Path. & Bact.* **1**:168, 1892) reported that human subjects exposed to 10 per cent carbon dioxide in the presence of ample oxygen "became stupefied." In his book on Respiration (1921), Haldane remarks that the quieting effect on respiration of excess concentrations of carbon dioxide probably led early observers to overlook the stimulation of breathing caused by lower concentrations. Loewy and Zuntz (Ueber die Bedeutung des Sauerstoffmangels und der Kohlensäure für die Innervation der Athmung, *Arch. f. Physiol.*, 1897, p. 379), working with animals, found maximum increase in pulmonary ventilation at 15 per cent carbon dioxide. When higher concentrations were used, breathing volume was reduced by the "onset of narcosis." Hill and Flack (The Effect of Excess of Carbon Dioxide and of Want of Oxygen upon the Respiration and the Circulation, *J. Physiol.* **37**:77 [June 30] 1908) noted an increase in blood pressure, most marked with concentrations of from 10 to 25 per cent. When the inspired atmosphere exceeded 25 per cent concentration of carbon dioxide, circulatory depression was noted. They thought that in normal men the effect of increasing concentrations of carbon dioxide was stimulant to respiration until 10 per cent was reached, after which progressive depression of ventilation was developed. E. W. Brown (Value of High Oxygen in Preventing Physiological Effects of Noxious Concentrations of Carbon Dioxide, *U. S. Nav. M. Bull.* **28**:523 [July] 1930) referred to much of the foregoing work and reported his experiments, with submarine personnel of the navy as subjects. He found among other things that a maximum stimulation of respiration was reached at 10.4 per cent carbon dioxide. The average maximum time which this concentration could be tolerated by healthy men without marked subjective symptoms was two and a quarter minutes. He noted individual variations in the reaction of different men under identical conditions. He checked the influence of excess oxygen concentration and found that it did not change his results. Finally he says, "It is not believed that any of the subjects could have withstood 10 per cent carbon dioxide for longer than ten minutes without losing consciousness."

Although the usefulness of carbon dioxide in clinical therapy is admitted by a host of writers, words of warning are scattered throughout the literature. J. Ross Mackenzie (Carbon Dioxide in Gas and Oxygen Anesthesia, *Brit. J. Anaesth.* **4**:92 [Oct.] 1926) cites cases of carbon dioxide overdosage in anesthesia, as I also have (Waters, R. M.: Carbon Dioxide: Its Place in Anesthesia, *Canad. M. A. J.* **17**:1510 [Dec.] 1927. Waters, R. M.; Wineland, A. J., and Seevers, M. H.: Carbon Dioxide and Oxygen Problems in Anesthesia, *Anesth. & Analg.* **10**:10 [Jan.-Feb.] 1931). The latter emphasizes the fact that clinical patients may vary widely from the normal as to chemical balance and acid base equilibrium and may therefore in certain cases react very differently to increases in carbon dioxide tension in the inspired atmosphere as compared with normal individuals or laboratory animals. Peiper and Cammann (Kohlensäure bei den Atemstorungen der Neugeborenen und Frühgeburten, *Monatschr. f. Kinderh.* **53**:323 [June] 1932) recently reported graphic records of effects of carbon dioxide mixtures with oxygen, administered to premature infants. They found that the changes were not regular and noted in a number of cases "shock reactions" at the beginning of administration.

There is, then, quite general agreement that a concentration of more than 10 per cent carbon dioxide in the inspired atmosphere produces unconsciousness in normal animals and men. Much higher concentrations are required to produce respiratory depression in normal individuals. All investigators agree that circulation is markedly stimulated with slight increases in carbon dioxide, while depression of cardiac muscle may accompany higher concentrations. The lack of agreement as to the exact concentration for maximum stimulation, both of respiration and of circulation, may be due, as suggested by Brown, to the fact that subjects dislike to expose themselves to increased carbon dioxide tension for long periods.

From personal experience, I am convinced that the variation in reactions, noted by several workers, in different normal individuals under identical conditions is greatly exaggerated when one deals with people suffering from various disease states. Abnormalities in the physiologic balance of the respiratory center as well as of the chemistry of the body fluids may be factors causing such variations. In attempting to induce ether anesthesia by means of carbon dioxide-oxygen mixtures, several times I have suddenly found the patient precipitated into a marked respiratory depression or even arrest, without first having noted the usual hyperpnea to be expected under such circumstances. Such a depression or apnea may be accompanied by a grayish pallor indicative of marked circulatory depression as well. The class of cases in which these experiences occurred were those in which acid-base balance disturbances were common, although laboratory support of the presence of such abnormality previous to anesthesia was lacking. Afterward, chemical examination of the blood in one case showed definite severe decrease in carbon dioxide combining power. The ill advised use of carbon dioxide is illustrated by the following case: An infant was given an ether anesthesia accompanied by marked respiratory obstruction. Color was kept pink by a high tension of oxygen maintained in the atmosphere, which passed the obstruction with each respiratory effort. A carbon dioxide-oxygen mixture was foolishly administered on the release of the obstruction at the end of operation, without consideration being given to the already high blood carbon dioxide likely to be present accompanying respiratory obstruction. Both respiratory and circulatory depression were immediate and the baby died within a short time. I fully appreciate the possible damage which may occur from prolonged respiratory obstruction, yet I believe that the carbon dioxide added at the end of this anesthesia was no small factor in causing the death.

I believe that carbon dioxide is several times more toxic than ethylene or nitrous oxide. In view of this fact, I feel justified in questioning your statement that "carbon dioxide, when administered with ample oxygen during or after anesthesia, is entirely nontoxic." Your statement may be relatively true in normal individuals. However, patients come to the operating room in various stages of physiologic disturbance. The respiratory center may be overstimulated or it may be depressed. The acid-base balance may be deviated toward acidosis or toward alkalosis. The same conditions obtain in cases in which carbon dioxide therapy may be contemplated in the wards of the hospital. Indication for the use of carbon dioxide, it seems to me, should be the need for the production of a definite physiologic effect, which carbon dioxide is known to produce. Only careful clinical observation can determine the proper dose in a given case, either in concentration or length of time over which that

concentration should be inhaled. I believe that carbon dioxide is an extremely useful drug, but I also consider it a powerful as well as a seriously toxic agent when misused.

Ralph M. Waters, M.D., Madison, Wis.
Associate Professor of Surgery
in Charge of Anesthesia.

## A PHYLOGENETIC STUDY OF INSANITY

*To the Editor:*—It is so gravely important to increase our understanding of human nature in health and in disease that any effort in this direction should be commended. But a body of knowledge must be defended; and we must recognize that as much harm can be wrought by some proponents of psychiatry as by its antagonists. I refer specifically to Trigant Burrow's paper on "A Phylogenetic Study of Insanity in Its Underlying Pathology" in The Journal, March 4.

Dr. Burrow first tells us, in his definition of "phylopathology" and in the implications inherent in his choice of that term, that there is no such thing as a Man Alone; that Rousseau's "Natural Man" and the Noble Savage and Individualistic Psychology are based on romantic concepts. Undoubtedly Man is a social creature, as he is also a chemical congeries, a philosophic concept, an economic unit or a Son of God, depending on one's point of view. And it is probably a good thing that we be reminded that Man is a point in a phylum and must be so considered; that Man has physical, chemical, electrical and social relationships and must find his place in the dynamics of these relationships under penalty of physical or psychic disease. It is also undoubted that men communicate with one another in various fashions, such as talking, and that they frequently misunderstand one another in spite of the fact that they seem to be speaking the same language; for language is symbolic representation, but although the symbols are standard enough, they are by no means fixed, nor ever completely expressive of the entire meaning one wishes to convey. It is generally agreed, too, that the prefrontal cortex is not a mere sensory waystation, but that it has the practice of interpreting and distorting raw facts even to the point at which insanity is possible.

But it is just at these truisms that Dr. Burrow goes astray by remaining superficial. The interplay between a man's consciousness of himself and the realities that surround him is far too profound to be settled by the coining of terminology. Whoever advocates a new point of view in psychiatry must first answer, in the light of that point of view, How do we know anything? What is the basis for feeling that one thing is real and another thing is unreal? How much of this sensation that I happen to feel is due to an external stimulus and how much is it due to my sensory organs or to my state of mind? Why do we associate perceptions in certain ways? Why do we invest with emotion certain ideas or objects or words? Dr. Burrow has tacitly raised all these questions. Occasionally he recognizes the fact, as when he says "The patient falsely projects feelings and sensations whose only basis of reality is his own arbitrary, symbolic projection of them," which raises the question only to beg it. We are told about actions "which are presumably not false but which, being 'normal,' are held to be 'true,'" and the italics with which the author encloses "normal" and "true" are in no wise explained by the irrelevant footnote appended at that point. In the absence of definition of such basic concepts, Dr. Burrow's attempt to tell us how "false" was changed to "true" is necessarily futile. The single case cited by the author is equivalent to the thousands of cases treated by faith-healers, a false criterion scientifically if we are not told the conditions under which the cure took place; for if the patient was led from "false" to "true," then where did he start, what ground did he cover, and where did he end up? A case history cannot be given as proof of an hypothesis merely by being included in the same article with it. That case must be interpenetrated with definition and generalization before it can serve as valid testimony; and Dr. Burrow has not conformed to this necessity.

Yet Dr. Burrow's paper is merely a single overt example of the case into which most American psychiatrists have fallen. Any one who attempts to talk about reality must be a cultured metaphysician. It is a pity that the abstruse reputation of metaphysics has frightened so many estimable minds. Perhaps the example of Freud, who formulated a metapsychology, will animate his followers to a like understanding; for what Freud achieved, in common with his predecessor metaphysicians, was an epistemology—a private scheme, a set of presumptions, to explain the apparently irrational processes that we call psychic. Freud's shortcomings are those common to all pioneers. But it is along the lines he indicated in his metapsychology that his contribution took real scientific root; and it is on this basis that his work will be modified and advanced.

E. Edward Harkavy, M.D., New York.

## STAPHYLOCOCCI AND BACTERIOPHAGY

*To the Editor:*—In The Journal, April 1, page 1014, appears an article by Felix d'Herelle and M. L. Rakieten relative to the susceptibility of hemolytic staphylococci to bacteriophage in which the authors come to the general conclusion that, "hemolytic staphylococci are particularly susceptible to bacteriophagy." The authors in their paper present evidence in the work of Epstein and Fejgin, McKinley and Câmara and their own which shows that at least thirty-nine strains of hemolytic staphylococci have been studied which are resistant to bacteriophagy. While there may be a "tendency" for the hemolytic type of the staphylococcus to be susceptible to the action of bacteriophage, it is somewhat misleading to generalize on this point. This is particularly so because of the clinical implications involved and because of the fact that several of the biological houses are now placing preparations of bacteriophage on the market. Certainly the physician will wish to know if the particular staphylococcus infection he is dealing with in his patient is susceptible to the bacteriophage which is supplied him, for otherwise such supposed specific treatment would lack any scientific basis. It was because of this consideration that we were prompted to publish a note on the seven strains of staphylococcus (hemolytic) which were found to resist the action of a supposed polyvalent staphylococcus bacteriophage.

Earl B. McKinley, M.D., Washington, D. C.

## ERYTHROCYTE SEDIMENTATION RATE IN DISEASE

*To the Editor:*—In an editorial in The Journal, March 11, entitled "The Erythrocyte Sedimentation Rate in Disease," it is stated that, in spite of many studies, the theory behind variations in the sedimentation rate remains clouded. There is, however, a general agreement among many observers, e. g., Fåhraeus (*Physiol. Rev.* **9**:241 [April] 1929), Starlinger (*Biochem. Ztschr.* **114**:129, 1921), Westergren (*Ztschr. f. d. ges. exper. Med.* **75**:668, 1931) and Gram (*Arch. Int. Med.* **28**:312 [Sept.] 1921), that an increase in the sedimentation rate is chiefly due to an increase in the fibrinogen or globulins of the blood. Although other factors also play a rôle, such as hydremia, anemia, erythrocytosis and color index (Rourke and Plass: *J. Clin. Investigation* **7**:365 (Aug.) 1929. Rourke and Ernstene, *ibid.* **8**:545 [June] 1930. Bendien and Snapper: *Biochem. Ztschr.* **235**:14, 1931. Ohno: *Ztschr. f. d. ges. exper. Med.* **52**:643, 1926, and others) changes in plasma proteins appear to play the greatest rôle. The sedimentation rate is increased when the viscosity of the plasma is raised by increase of the fibrinogen or the globulins, or when the number

of erythrocytes is reduced. The rate is decreased when the plasma is diluted or when the red cells are increased in number. The changes in sedimentation rate can readily be demonstrated in vitro by altering the viscosity of plasma with acacia or with physiologic solution of sodium chloride. The ultimate cause of the increase or decrease of fibrinogen and globulin is at present being actively investigated and appears to some to be related to the disintegration of cellular elements (as suggested by Hofmeister and others) brought about by infection, injection of foreign proteins or poisons and in certain diseases of the blood-forming organs. The theories in regard to the causes of variations in the sedimentation rate are therefore not as clouded as one might be led to believe by the editorial.

H. A. REIMANN, M.D., Minneapolis.

## Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

### USE OF OBSTETRIC FORCEPS

*To the Editor:*—With all the emphasis on correct cephalic application of forceps in obstetric literature, I find no reference to the difficulty (and in my own experience, the impossibility) of an exact application in cases of extreme molding of the skull. When the mento-occipital diameter is 14 or 15 cm., the biparietal 9 cm., and the head well flexed and impacted in a small pelvis or held very firmly by the soft parts, I find that the forceps will not fit along the sides of the head. I diagnose with the whole hand in the vagina, insert the posterior blade in the correct position, and then attempt to bring the wandering blade opposite it. Sometimes the wandering blade will not pass beyond an oblique position. Sometimes I can bring it into correct relation with the first blade, but when I lock the forceps they slip into the oblique position. On extraction I find that the second blade was applied so that its tip just overlapped the outer angle of the frontal ridge. On account of the extreme molding, the blade was not long enough to reach the malar prominence. This molding also alters the curve of the side of the head, so that the cephalic curve of the forceps is too short and deep to adapt itself to that curve. Experiments on the head after delivery demonstrate that the oblique frontomastoid application was the only one possible. I have not found that it requires any more force to deliver in these cases, or that there is any adverse effect in increasing fetal mortality. I should like to ask what the experience of other obstetricians is in this question. Is there any literature on the subject? Recognizing that my own experience is too limited to justify conclusions as to the relative safety of extraction with an oblique frontomastoid application, I should like to find statistics on it. I wish especially to ask how to overcome the difficulty of correct application of the wandering blade to the markedly elongated head, when the posterior ear is barely past the superior straight while the caput is at the perineum.

MARIAN E. MANLY, M.D., Chengtu, Szechuan, West China.

ANSWER.—Prophylactically, it is wise to interfere before a woman has labored long enough to produce the extreme molding of the fetal head described in the query. In the cases in which earlier intervention would result in injury to mother or child, delivery is difficult. Generally the head presents as an occiput posterior or occiput transverse and the latter most likely occurred in the case cited, although this is not specified. Diagnosis by means of the position of the sutures and the fontanels is usually impossible because of the edema present on the head. Hence the only safe way is to insert most of the hand into the vagina and attempt to feel an ear. The posterior ear is the one usually sought, but with experience one can learn to outline the anterior ear. This has the advantage that the fingers need not be inserted as high up into the pelvic canal as when feeling for the posterior ear, and there is less need of displacing the head with the possibility of prolapse of the cord. In all cases of occiput posterior it is advisable to attempt to rotate the occiput with the hand to an anterior position or at least to a transverse position. The general teaching concerning the application of the forceps blades is to insert the left one first and then the right one. This is advisable for all cases of occiput anterior and also for cases of transverse positions, especially left occiput transverse. When the blades are thus inserted, it is easy to lock them. However, in some cases of right occiput posterior in which the occiput cannot be rotated manually to an anterior position but only to a transverse position, it is frequently best to insert the right blade first as was done in this case. Since this is the posterior blade, it will require some manipulation of the left or anterior blade to make it lock properly with the right one, because the left blade should fall under the right one and not above it, as occurs when the right blade is inserted first.

When the head cannot be rotated from the transverse diameter, the best way is to apply the forceps obliquely as follows (for right occiput transverse): Since the front of the forceps must face the occiput, the blades should be inserted so that they lie in the right oblique diameter of the pelvis. The left blade is inserted anteriorly behind the left iliopubic tubercle so that it lies over the left anterior malar bone, and then the right blade is inserted posteriorly opposite the right sacro-iliac joint so that it lies over the right posterior parietal bone. The first or left blade is the one that must be made to wander into place by being turned around the side of the pelvis over the child's face. Locking in cases of oblique application is not easy because the parietomalar diameter is larger than the biparietal. Therefore, the handles should not be compressed too much. The statement is made that "sometimes the wandering blade will not pass beyond one oblique position." When the occiput is anterior, there is no necessity of making a blade wander into place. When the occiput is transverse, it is extremely difficult with the usual Simpson forceps to make the wandering blade rotate sufficiently to make a perfect biparietal application; hence the wandering blade and its mate must usually be applied in an oblique diameter. However, such special forceps as the Barton or Kielland permit an exact biparietal application with the head in the transverse diameter.

Frontomastoid application may result in injury to an eye or to a facial nerve. It is better to attempt a parietomalar application whenever possible. When the molding is so extreme that this is impossible, one simply must apply the blades in the best possible manner and extract the child with great care. Since in these cases the bag of waters has long been ruptured, it is usually hazardous to perform a version and extraction.

### CULTURE OF SCARLET FEVER STREPTOCOCCI

*To the Editor:*—Recently in a case of clinically typical scarlet fever, cultures on Loeffler's blood serum medium and plain agar slants, and smears made on the day of onset yielded a gram-positive capsulated diplococcus and staphylococci. No streptococci were found on the original smear or on the cultures at the end of twenty-four and forty-eight hours. Smears and cultures made on the second day of illness, when the eruption appeared, showed only staphylococci. The cultures presented at twenty-four and forty-eight hours a vigorous growth of Staphylococcus aureus and Staphylococcus albus. My bacteriology being rather primitive, I do not know what conclusion to reach. Is the absence of streptococci on smears and cultures, carefully made, reasonable proof that the disease was not scarlet fever, or were my mediums unsuitable for the growth of the streptococci of scarlet fever? In similar cases in the past, in which the tonsils presented small yellow patches of membrane, I have found an apparently identical gram-positive capsulated diplococcus which on culture developed into short chains. In none of these cases, however, did I observe a rash such as the one in the present case. This time the diplococci, which were present in large numbers and almost unmixed with other bacteria, on the first smear failed to develop into chains and the patient on the second day produced a very florid scarlatiniform rash. I would greatly appreciate your opinion. Please omit name.

M.D., Indiana.

ANSWER.—Cultures on Loeffler's blood serum medium and on plain agar slants are not adequate to determine the presence of scarlet fever streptococci; nor are direct smears. Cultures should be made from the nose and from the throat on blood agar plates. These plates are incubated over night and examined the next day for the presence of hemolytic streptococci. If the case is one of surgical or puerperal scarlet fever, cultures should be made from the surgical lesion or from the cervix.

### TREATMENT OF CYSTITIS

*To the Editor:*—I have as a patient a man with a severe alkaline cystitis. He had neglected a condition for which the prostate was removed and healed nicely. Daily irrigations with boric acid or potassium permanganate solution (1:8,000) for two months were followed by mercurochrome, 2 per cent, or silver nitrate solution (10 cc. of 1:500) or 0.25 per cent phosphoric acid. By mouth he has had as much as 60 grains (4 Gm.) of acid sodium phosphate three time a day with 20 grains (1.3 Gm.) of methenamine. Pyridium also has been tried. Neoarsphenamine has been administered intravenously. The urine is better but still filled with pus and is alkaline. What else would you suggest? What is the maximum dose of acid sodium phosphate?

MERVIN T. SUDLER, M.D., Lawrence, Kan.

ANSWER.—In an instance of an old stubborn cystitis, irrigations are not of any pronounced therapeutic efficacy. Flushing of the viscus serves only the temporary cleansing of the bladder wall, which manipulation should be followed by the instillation of about 2 cc. of a more concentrated solution of some silver salt. Acidifying of the urine is best accomplished by the oral administration of diluted hydrochloric acid, ten drops in a glass of water three times a day. At any rate, cystoscopic examina-

tion of the bladder is necessary in order to determine whether there is any obstruction at the vesical neck and whether there are present irregular granulations or ulcerations at the prostatic bed, which if found have to be treated by electrocoagulation. After the bladder is once cleared up to a satisfactory degree, ureteral catheterization will be indicated in order to determine whether or not pyelitis is present, which if found has to be treated by pelvic lavage. If, however, as so frequently is the case in infiltrating cystitis, the treatment mentioned fails, only cystostomy and prolonged drainage will furnish definite relief. The quantity of acid sodium phosphate as mentioned represents about the normal dose.

## THYROID EXTRACT IN COLD SENSITIVITY

*To the Editor:*—In THE JOURNAL, January 7, in the Current Medical Literature department, is an abstract of an article from the *Annales de médecine*, entitled "Urticaria from Cold," by Weissenbach and Brisset. They state that all therapeutic measures used were without results. I was greatly troubled last winter with urticaria from cold. I spoke to a skin specialist about it, and he had no remedy to offer but told me he knew of another physician who had the same trouble. Last fall I began taking thyroid extract on the advice of my physician for another condition. I noticed as the cold weather came on that I was not troubled with urticaria when my hands, feet and knees became cold. I forgot to take the thyroid for several days and the trouble promptly returned. It disappeared again, however, as soon as the thyroid tablets were resumed. I had a patient recently, a young woman, who complained that she had to wrap her knees in shawls to keep warm in bed. I gave her thyroid extract, and she ceased to be troubled with the cold. I am suggesting this remedy for further treatment of these cases. The dose that I took was 1 grain (0.065 Gm.) a day.—A. T. BLACHLY, M.D., Portland, Ore.

ANSWER.—The use of thyroid extract in trouble of this sort is not unknown. Metabolic tests in cases of heat and cold sensitivity give variable results in different patients and in the same patient at different times.

The feature most impressive in heat and cold cases, so far as metabolism is concerned, is its instability. In one case of urticaria caused by cold described by Duke on four different days the metabolism was —60 or thereabouts. He gave a small dose of B. coli vaccine for the purpose of inducing fever, with the result that the metabolism rose immediately to normal and the urticaria disappeared. This was reported in the *Archives of Internal Medicine* many years ago in a paper entitled "Heat and Effort Sensitiveness and Cold Sensitiveness."

## TREATMENT OF MENORRHAGIA DUE TO ABNORMAL PITUITARY FUNCTION

*To the Editor:*—A girl, 5 feet 10 inches (178 cm.) in height, 16 years of age, had normal menstruation until two years ago and since then has had prolonged bleeding. During the past year she has been free from bleeding for only three months. The heart, kidneys and lungs are normal. The blood picture is normal, excepting secondary anemia (caused by this continuous menstruation). Just now she is in her eighth week of menstruation again, four napkins each day. Her condition is poor. At first Cisomensia and Hyptocin seemed to help. I had the spleen irradiated six months ago. It seemed to help, because the bleeding stopped a few days later. I am having another irradiation done, with negative results. The examinations of the pelvic parts have not revealed any abnormality. What else do you suggest? Does scraping help in these cases? What about heavy x-raying of the ovaries?

R. BURTON-OPITZ, M.D., Palisade, N. J.

ANSWER.—There is undoubtedly a disturbance in one or more glands of internal secretion in this case, as evidenced by the fact that the girl is so tall for her age and also because of the persistent uterine bleeding. The gland that is most likely responsible for both the excessive height and the menstrual irregularity is the pituitary. A curettement should first of all be done for two reasons. It will almost certainly produce a temporary cessation of bleeding and it will permit a diagnosis of the type of endometrium present in the uterus. In the case cited, the endometrium will most likely present the condition known as endometrial hyperplasia, which is characterized by a "swiss-cheese" pattern. In such cases the ovaries show a persistence of the unruptured graafian follicles and an absence of corpora lutea. This indicates that there is a disturbance of ovarian secretion which consists of a persistence and excess of the follicular hormone (folliculin or theelin) and an absence of the corpus luteum hormone (progestin). The cause of the abnormalities in both the uterus and the ovaries is probably a disturbance in the anterior lobe of the pituitary gland. If an active preparation of corpus luteum hormone were available for clinical use, it would most likely be possible by its repeated use to bring about a rhythmic cycle in the uterine endometrium and therefore a cessation of the persistent bleeding. Thus far no such preparation has become available and, even if there were one, injection of this substance would have to be repeated each month because it apparently has no effect on the ovaries. The changes in the ovaries are not the basic cause for the intractable uterine bleeding. The fault lies in a disturbance of the anterior lobe of the pituitary gland, which is responsible for the persistent graafian follicles, and these in turn lead to the abnormal uterine bleeding. Therefore, the administration of the luteinizing hormone of the anterior pituitary gland should bring about a conversion of the granulosa cells of the ovary into lutein cells and a cessation of the irregular bleeding. This substance may be obtained from the urine of pregnant women. Novak and Hurd (*Am. J. Obst. & Gynec.* **22**:501 [Nov.] 1931) report excellent results with this form of therapy in fifty-one cases of functional uterine bleeding. These authors arbitrarily administered 200 rat units intramuscularly every day, and in all but seven cases the bleeding was checked in a short time. With this form of therapy, roentgen treatment is unnecessary; but sometimes irradiation of the pituitary gland, as suggested by Hofbauer, is efficacious. Neither x-rays nor radium should be applied to the ovaries in a 16 year old girl until all other measures have been given a thorough trial.

## DELAYED SENSITIZATION AFTER BURN

*To the Editor:*—A woman, aged 20, received a first and second degree burn on the forearm by flames spurting out of a furnace door. The whole forearm was red and an area of about two square inches blistered. I applied a butesin picrate dressing. Next day I applied the butesin picrate over the blistered area and petrolatum elsewhere. On the third day and thereafter a plain petrolatum dressing was applied. All went well for a week, when an itchy papular eruption began to appear over the burned area. This became edematous and itching. I attributed it to a hypersensitivity to the butesin picrate, as the rash roughly corresponded to the area over which the ointment had been applied. Calamine lotion was applied with the expectation that shortly the process would subside. Rather than subsiding, the eruption has become worse and has spread to the upper arm and to the fingers and also to the other arm. I am under the impression that a toxic eruption arising from local application would be confined to the area of application and would not, as in the case of a plant dermatitis, be likely to spread to other areas. Is it not likely also that an eruption caused by an applied chemical would appear soon after application rather than a week from the time it was first applied? The length of the application in this case was not great. Would one expect a severe dermatitis from such short contact? Is it possible that the hypersensitive condition of the skin over the burned area would allow a plant or animal dermatitis to develop, whereas it would not develop on contact with normal skin? The patient lives on a farm, where such contacts would be possible. Finally, aside from soothing lotions and rest, is there anything further you would advise in treatment? Please omit name.

M.D., Michigan.

ANSWER.—It is of course possible that an infection occurred in the burned area. This often occurs; but the absence of vesicles from the eruption described speaks against this theory, for impetigo and ringworm infections, when acute enough to spread so rapidly, are usually vesicular. Absorption of sufficient picrate from so short an application is possible. The interval of quiescence was that necessary for sensitization to occur. Spread beyond the area to which the drug was applied is also a common phenomenon. The case is probably one of delayed sensitization. The treatment is appropriate, except that alkaline internal medication might be added.

## NEW FORMULA FOR PEPSODENT ANTISEPTIC

*To the Editor:*—Some time ago you published a formula for Pepsodent Antiseptic. Is the same formula still in use?

M.D.

ANSWER.—The A. M. A. Chemical Laboratory states that it has not examined Pepsodent Antiseptic. The formula given about two years ago, which was reproduced in THE JOURNAL, April 18, 1931, page 1332, was:

| | |
|---|---|
| Chlorthymol | 0.2000% |
| Benzoic acid | 0.2000% |
| Boric acid | 10.0000% |
| Citric acid | 0.1000% |
| Tartaric acid | 0.1000% |
| Flavor | 0.1471% |
| Color | 0.0080% |
| Glycerin | 10.0000% |
| Alcohol | 25.0000% |
| Water | 54.2449% |

Recent advertising material received from the Pepsodent Company shows that there has been some change in the formula, as witness the following:

| | |
|---|---|
| Chlor-thymol | .0700% |
| Benzoic Acid | .2000% |
| Tartaric Acid | .1000% |
| Citric Acid | .1000% |
| Boric Acid | 1.0000% |
| Flavor | .0687% |
| Color | .0015% |
| Solvents | 98.4598% |

Evidently the amount of chlorthymol and boric acid has been decreased. The composition or relative proportions of the "solvents" is not given in the later formula. The product, of course, is sold under vastly unwarranted and exaggerated claims.

### TREATMENT OF URTICARIA

*To the Editor:*—I have at present three cases of generalized urticaria, persisting from day to day—all of them having a duration of over nine months—one of them nine years. Physical examinations are negative. One patient is obese but has a normal basal metabolism. Two of them are negative to skin tests; the other has such a marked dermatographia that a control skin scratch causes an area of redness 2 or 3 inches in diameter and makes the interpretation of the tests unreliable. All of them have been on elimination diets for months. I would be appreciative of any therapeutic suggestions. Cod liver oil and yeast have had some publicity recently in the treatment of hay fever: Is this substantiated in the other allergic conditions? Is the ultraviolet ray beneficial at all.

R. W. MERKLE, M.D., Alton, Ill.

ANSWER.—In the consideration of generalized urticaria that has proved resistant to treatment, it might be well to take stock. Has every possible etiologic factor been considered and has it been ruled out as completely as possible? Urticaria is usually due to foods, and this factor has been attended to here by elimination diets without success; therefore foods are probably not responsible in these three patients. Attention should therefore be placed on other possible causes, such as drugs, cosmetics, epidermals, foci of infection, and, of course, nervous elements, which cannot be omitted from consideration as they are frequently the result of urticaria as well as sometimes a precipitating factor. The drug situation should be carefully checked; coal-tar derivatives, such as acetylsalicylic acid, amidopyrine and acetphenetidin, are frequent causes of urticaria. Likewise cathartics, such, for instance as contain phenolphthalein, may be responsible. Quinine, opiates and others may play a part. Cosmetics may be important; the patients should not be permitted to use any for a trial period, say two weeks. Contact with epidermals may cause urticaria—a horsehair mattress, a feather pillow or actual contact with animals. Foci of infection, particularly in the gallbladder, may cause trouble. Patients have been relieved by the removal of infected gallbladders. Any nervous tendencies should be relieved as far as possible.

If all these methods of search fail, there is left nonspecific therapy, a host of varied methods of treatment, used with success here and there but failing frequently. Among these may be mentioned the giving of about 0.3 to 0.5 Gm. of Witte's peptone in capsules about one hour before meals; the use of cathartics, with or without the addition of bile salts, presumably to aid the action of the liver and bile tracts in digesting proteins; autohemotherapy—the removal of from 10 to 20 cc. of blood from a vein of the patient, followed quickly by the injection intramuscularly of this blood into the same patient; also heterohemotherapy—the injection intramuscularly of blood from another person. The administration of ephedrine seems to be of help in some cases. The giving of calcium may be of service. Vaccine therapy has benefited a few. Change of residence or of climate is sometimes successful.

The supposed beneficial action of cod liver oil, ultraviolet rays and yeast in the treatment of hay fever has not been proved at all; the use of these in urticaria has not to date been satisfactory.

### PAINFUL INTERCOURSE AFTER PROSTATITIS

*To the Editor:*—A man, aged 30, has had sexual intercourse for the past thirteen years one or two times a week, excepting a period from October, 1928, to April, 1929. During this time he had gonorrhea accompanied by a posterior urethritis and a prostatitis. The latter confined him to bed for two days because of fever, pain, frequence and dysuria. The prostate at this time was enlarged and painful. This condition gradually subsided. After recovery from the infection, he resumed intercourse one or two times a week. During the past two years he has noticed that there is not the same pleasure as formerly and he is able to complete the sexual act but once a week and never more than one time, where formerly it was at least two. Although he can obtain an erection, he does not experience an ejaculation on the second attempt. Occasionally after intercourse he experiences pain referred to the perineum, but this is not often. After the prostatitis, he had no massages. Physical examination now reveals no abnormalities excepting two or three shotty-like masses along the floor of the anterior urethra, infected and distended glands of Littré, which developed during the acute gonorrhea. There is no stricture, as sounds up to 20 F. can be passed with ease. The meatus will not admit a larger sound. Prostatic smear reveals one or two pus cells per high power field but not to every field. No gonococci have been found. The gonorrheal discharge has never returned even after alcoholic excess. On one occasion, after intercourse, slight frequency and slight dysuria developed on the second morning after. Examination then revealed pus in the urine. This cleared up in two days on alkalis. 1. The patient is desirous of knowing whether intercourse will again become pleasurable. 2. Would it be safe for him to marry? 3. Should the glands of Littré be treated or left alone? 4. Would prostatic massage benefit this patient since there are so few pus cells present? I would appreciate your opinion on this. Please omit name and address.

M.D., West Virginia.

ANSWER.—1. With proper treatment, a person at his age ought to be able to experience pleasure and perform the act of intercourse just like any normal person. There is undoubtedly present a congestion of the prostate and prostatic urethra to account for the symptoms. He should receive, every five days, gentle massage of the prostate and instillations of weak (from 1:3,000 to 1:500) silver nitrate solutions with the Bangs sound syringe. The object of the massage is not to get rid of the few pus cells present but to relieve the congestion just like massage anywhere else in the body.

2. As regards marriage after an attack of gonorrhea, at weekly intervals, and in the absence of any treatment, the patient should have a microscopic examination made of any discharge at the meatus as well as of the expressed prostatovesicular fluid obtained by massage after the patient has not urinated for several hours. These examinations are made for gonococci until there are three negative reports. In another week after the last slide specimen, early in the morning before he has passed any urine, a culture should be made of the same expressed fluid as well as of the centrifugated urine passed after the massage. If this is negative, in another week a few drops of 5 per cent silver nitrate solution should be injected into the anterior and posterior urethras and another culture should be made about thirty-six hours after the injection. If this is negative, a gonorrhea complement fixation test should be made. If this is also negative, a subcutaneous injection of gonococcus vaccine should be given and a final culture made in forty-eight hours. If this final culture is negative, the patient can be safely pronounced free from infection. It is important, however, to have all these pathologic examinations made by an expert pathologist.

3. The glands of Littré may be left alone unless some of the specimens show the presence of gonococci in the anterior urethra.

4. This question has been answered in the discussion of the first question.

### EXHAUSTION OF SENSE OF SMELL

*To the Editor:*—I have an unusual request to make. One of my patients is a perfumer in a large concern. After he has worked for an hour or two his sense organs are either so saturated or so exhausted that it is hard for him to get the minute differences in odors which he must detect. I have suggested to him that he might occasionally irrigate his nose with physiologic solution of sodium chloride but I do not care to have him do this too frequently. Has this condition been called to your attention or has anything been written on it up to the present time? If so, will you tell me where such literature can be found, or will you suggest something that will be helpful in this condition?

CARL C. COWIN, M.D., Los Angeles.

ANSWER.—The phenomenon described is a common observation. Many odors, such as perfumes of flowers, quickly cease to give noticeable sensation when the stimulation is continued. It is not known whether this failure means fatigue of the sensory cells in the nasal membrane or central fatigue in the brain. The practical course for the person in question would be to arrange the testing in such a way that, except for the moment of inhaling the odors for the making of judgment, he should breathe air uncontaminated with the perfume. If this is not feasible, he might retire from the testing room at short intervals and thus, by breathing air free from the perfume, permit the fatigue to disappear and normal sensitiveness to be restored. There is no evidence that irrigation of the nasal mucous membrane with physiologic solution of sodium chloride will hasten recovery from local peripheral fatigue. If the phenomenon is due to peripheral fatigue during such irrigation there would be diminution of the stimulus of the perfume factor, but this can be accomplished more easily, and with less chance of infection, by breathing air free from the perfume for brief periods. At least this will be worth trying out and the results of the experiment would be worthy of note.

### INTRAVENOUS INJECTIONS IN INFANCY

*To the Editor:*—Please give the technic for giving intravenous injections to infants. Please omit name.

M.D., Texas.

ANSWER.—The technic for giving intravenous injections to infants is essentially the same as for adults. The chief difference is in the choice of veins used.

When the anterior fontanel is open, it offers the easiest site for injection into the superior longitudinal sinus; but it is not without danger and should be used only by one experienced in the procedure or when the other veins cannot be used. The "Goldbloom" needle or short sinus needle made for intrasinus work should be used. The apex of the posterior angle of the anterior fontanel is located with the index finger of the right hand. The needle is inserted here, pointed backward at an angle of about 50 degrees to a depth of from 4 to 8 mm. The obturator is removed, and if removal is followed by a flow of blood, the sinus has been entered. Once the sinus is entered, the connector on the rubber tubing should be inserted into the

base of the needle while the fluid is flowing. This expedient prevents the injection of air into the vein. At least ten minutes should elapse while from 150 to 200 cc. of fluid is being given. When the required amount of fluid has flowed into the sinus, the needle should be withdrawn quickly, the patient should be made to sit up a little, well supported, and firm pressure should be made over the puncture wound with a gauze sponge. Then a piece of adhesive tape (whose gum surface has been heated) is applied. This tape should be removed in from ten to twenty-four hours, to avoid irritation or infection.

The external jugular offers a safe and accessible site for intravenous injection in infants. That portion of the vein between the sternomastoid muscle and the clavicle is fairly accessible except in very fat infants. The procedure here is to lay the patient on its side on the table, have an assistant support the head, and pull the upper shoulder downward, thus throwing the posterior triangle of the neck into prominence. The usual antiseptic preparations are made and the most prominent position of this vein posterior to the sternomastoid muscle is chosen; a little pressure above the clavicle may make the vein more visible. The needle should be inserted almost parallel with the course of the vein and should point toward the clavicle. The appearance of blood at the base of the needle marks successful entry.

At the bend of the elbow the procedure is the same as in adults, but in applying the tourniquet care must be taken not to use too great pressure, as this will interfere with the arterial flow and as a result a collapsed vein may render the operation impossible. This is a common error in intravenous therapy in using elbow veins. Sometimes the head veins are large and can easily be used; occasionally the dorsalis pedis vein on the dorsum of the ankle is accessible.

About one fiftieth of the body weight is usually given and never more than one sixteenth. About 10 cc. per pound of body weight is the average amount. The fluid should be given preferably by gravity and kept warm, from ten to twenty minutes being taken to give about 150 to 200 cc.

The usual antiseptic technic is important, and proper facilities, as the table, good light, assistants, special needles and equipment, are necessary to make intravenous injection in infants. If this is done, the giving of fluids to infants may be done quite readily with little trouble.

## TOXIC GOITER

*To the Editor:*—I have been puzzled recently by three cases presenting the clinical signs of toxic goiter (tremor, loss of weight, nervous irritability, spastic constipation or diarrhea, and so on), but with no enlargement of the thyroid and with a low basal rate, from minus 9 to minus 14. What can I do for these people, and where can I get some information concerning such cases, without having to wade through pounds of literature? Your help will be appreciated.

L. K. STRATE, M.D., San Francisco.

ANSWER.—With definite evidence of thyrotoxicosis such as described, in spite of no visible enlargement of the thyroid and no increase in the basal metabolic rate, the patient should be treated with a high calory diet and a course of compound solution of iodine. If the effect is favorable—that is, if there is lessened irritability and nervousness, with increase in weight and strength—medical management can be continued with iodides or bromides. The age of the patient, the general condition, and failure to respond, should determine the advisability of surgery. A substernal enlargement should be ruled out. Innumerable references might be given, but the article entitled "Masked Hyperthyroidism," by W. W. Hamburger and M. W. Lev (THE JOURNAL, June 28, 1930, p. 2050) is an excellent study.

## COMPARISON OF PREPARATIONS OF LIVER EXTRACT

*To the Editor:*—In THE JOURNAL, January 7, on advertising page 4, there is an advertisement from Chappel Laboratories offering oral and subcutaneous liver extract. I should like to know whether subcutaneous injections are as potent and effective as intramuscular treatment. I have in mind a patient who lives about seven miles from my office, on a road that is often closed to cars in the winter time, who has been kept in good health on a dose of 2 cc. of P. D. & Co. liver extract intramuscularly once a week. I feel that if the subcutaneous method was as satisfactory I could save this patient trouble and money (which in this case is important) by letting him have a syringe and do his injections himself. Kindly omit name and address.

M.D., Wisconsin.

ANSWER.—A difference of opinion still exists as to whether the subcutaneous injection of liver extract is as effective as the intramuscular. It is not fully established whether horse liver is more effective than liver obtained from other sources. The one essential is that the patient must be given an adequate amount of liver, whether the method of administration is oral or parenteral—an amount sufficient to maintain the erythrocyte count above five million cells per cubic millimeter. Parenteral administration is much more effective than oral. Patients vary greatly, however, in the amount of liver required for adequate maintenance. Chappel's extract for subcutaneous administration is said to contain in one 2.5 cc. ampule the antianemic potency of 25 Gm. of raw liver; the Parke-Davis extract similarly is said to contain in one 2 cc. ampule the antianemic potency of 10 Gm. of liver; the Lilly extract, in one 10 cc. ampule that of 50 Gm. of liver; the Lederle extract, in one 3 cc. ampule the antianemic potency of 65 Gm. of liver. The amount of extract necessary for the maintenance of the patient can be ascertained only by observation. Ordinarily the red blood count may be maintained above five million cells per cubic millimeter by the parenteral administration of the active principle derived from 100 Gm. of liver at intervals varying from one to four weeks or by the weekly injection of the active principle derived from 25 to 100 Gm. of liver. Smaller doses often produce apparent good health but usually do not maintain the blood count at the desired high level.

## CONTROL AND DIAGNOSIS OF NARCOTIC ADDICTION

*To the Editor:*—I have a friend whose wife, who is about 30 years of age, has had several operations, each accompanied with a great deal of pain, for osteomyelitis, from about 1922 to 1930. During this time the patient was given narcotics, particularly codeine by mouth, for relief of the pain and at times, no doubt, was given more than was necessary. During the last two years she has had no signs of osteomyelitis or other sickness but her husband suspects that she is still using some habit forming drug and fears that it may be codeine. He has been unable to find any drugs or syringes and is sure that she is not using a syringe. He says that she has been more irritable and nervous during the last year or so, and he is unable to convince himself that she is not using it. Can you give me any suggestions as to signs or symptoms by which he might be able to determine whether she is using a drug? Please omit name and address.

M.D., North Dakota.

ANSWER.—There are no pathognomonic symptoms of narcotic addiction in its early stages or when only a moderate quantity is used regularly. Many morphine addicts have successfully concealed their habit for years when less than 2 grains (0.13 Gm.) is used daily, and with opium and its derivatives codeine and pantopon larger amounts can be used without detection. The rapidity with which the symptoms develop varies with the tolerance of the individual and the amount ingested; some require only a few months and others several years.

Narcotic addiction may be recognized by the varying emotional attitude, periods of mental freshness and unusual energy alternating with great weariness, dejection, irritability and stupidity; in the more advanced cases, by the loss of sexual power, anorexia, miosis, pallor and general muscular weakness.

The surest means of diagnosis is seclusion with absolute surveillance for a week under the care of a physician who understands narcotic addiction.

## INDUSTRIAL HAZARDS IN MANUFACTURE OF RADIO TUBES

*To the Editor:*—Will you kindly inform me whether any one has described a disease, or diseases, associated with the manufacturing of radio tubes? If so, kindly describe the disease and give me references.

MAURICE KLEINMAN, M.D., Newark, N. J.

ANSWER.—No occupational diseases peculiar to radio tube makers are known. On this account, no references can be cited. Through similarity of materials and operations in this industry to others in which experience is longer, justification exists for the assertion that a number of hazards may be found in radio tube manufacture. Molded bakelite or a similar plastic substance may form the base of the tube. Workers in these products are liable to develop acute skin diseases (occupational dermatitis). Certain of the wires used in the tubes are metal plated. The usual hazards of metal plating thus arise.

In some types of tubes, it is customary to etch metal parts, through sandblasting. This introduces the possibility of silicosis.

The silvering of tubes may lead to mercury poisoning.

Infrequently, arsenic is introduced into the tube in connection with efforts to reduce air and other gases in the tube. The metals used in filament making should be treated with respect, although it is observed that no cases, or at least few cases, of poisoning are known. Of the minerals in wide use (tungsten, thorium, platinum, iridium, molybdenum), thorium should be handled with caution, until future inquiry establishes that its radioactive properties are without dangerous possibilities for mankind.

## Council on Medical Education and Hospitals

### COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Milwaukee, June 12. Sec., Dr. William H. Wilder, 122 S. Michigan Blvd., Chicago.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: The *general oral, clinical and pathological* examination will be held in Milwaukee, June 13. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Milwaukee, June 12. Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: *Basic Science.* Little Rock, May 1. Sec., Mr. Louis E. Gehauer, 1002 Donoghey Bldg., Little Rock. *Regular.* Little Rock, May 9-10. Sec., Dr. Sam J. Allbright, Box 54, Searcy. *Eclectic.* Little Rock, May 9. Sec., Dr. Claude E. Laws, 803½ Garrison Ave., Fort Smith. *Homeopathic.* Little Rock, May 9. Sec., Dr. Allison A. Pringle, Eureka Springs.

CONNECTICUT: *Basic Science.* Prerequisite to license examination. New Haven, June 10. Address State Board of Healing Arts, 1895 Yale Station, New Haven.

IOWA: Iowa City, June 6-8. Dir., Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KENTUCKY: Louisville, June 7. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

MISSOURI: St. Louis, June 7-9. Sec., Dr. James Stewart, Capitol Bldg., Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: *Parts I and II.* The examinations will be held at centers where there are five or more candidates, May 8-10, June 26-28, and Sept. 13-15. Ex. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

NEBRASKA: *Basic Science.* Omaha, May 2-3. *Regular.* Omaha, June 7-9. Dir., Bureau of Examining Boards, Mrs. Clark Perkins, State House, Lincoln.

NEVADA: Carson City, May 1. Sec., Dr. Edward E. Hamer, Carson City.

OHIO: Columbus, June 6-9. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

WISCONSIN: *Basic Science.* Milwaukee, June 17. Sec., Prof. Robert N. Bauer, 3414 W. Wisconsin Ave., Milwaukee. *Regular.* Milwaukee, June 27-29. Sec., Dr. Robert E. Flynn, 401 Main St., La Crosse.

WYOMING: Cheyenne, June 5. Sec., Dr. W. H. Hassed, Capitol Bldg., Cheyenne.

## Book Notices

**Poliomyelitis: A Survey Made Possible by a Grant From the International Committee for the Study of Infantile Paralysis.** Organized by Jeremiah Milbank. Cloth. Price, $6. Pp. 562, with 49 illustrations. Baltimore: Williams & Wilkins Company, 1932.

The International Committee for the Study of Infantile Paralysis was organized in 1928 through a grant of a quarter of a million dollars by Jeremiah Milbank. The committee, under the leadership of William H. Park, consisted of thirteen representatives from the United States and one from England. Through a period of four years it sponsored work on poliomyelitis in various research laboratories in America and abroad, resulting in the publication in the medical press of eighty papers. The present volume is based on these reports, together with a bibliographic study of about eight thousand other articles on poliomyelitis. There are seven chapters in the book, devoted to historical summary, etiology, resistance and immunity, symptomatology, treatment, pathology and epidemiology. There is a topical analysis of each chapter and an excellent bibliography of forty-four pages. The research worker dealing with any phase of poliomyelitis will find this book of great value. As the publishers state, it is "a veritable one-volume reference library which embodies the most complete, up-to-date information available on all important aspects of the subject." The physician in general practice, however, will find less to help him if he is looking for a simple set of directions for the treatment of his patients. Each subject is gone into in great detail, the shortcomings as well as the merits of any procedure being fully emphasized. To all persons desiring to inform themselves on the sum of human knowledge regarding poliomyelitis, the book is recommended.

**Die juvenile amaurotische Idiotie: Klinische und erblichkeitsmedizinische Untersuchungen.** Von Torsten Sjögren, Statens Institut för Rasbiologi, Uppsala und Sinet Lars Sjukhus, Lund. Paper. Pp. 197-426, with illustrations. Lund: Berlingska Boktryckeriet, 1931.

The term amaurotic family idiocy usually recalls to one's mind the well known morbid entity described by Tay in 1881 and by Sachs in 1887 and known as the infantile form of this disease. The most remarkable features are the exclusive and early occurrence (at about 6 to 8 months) in Jewish infants of blindness, of dementia and of a cherry-red spot in the region of the macula. Amaurotic family idiocy occurs also in non-Jewish children but much later in life, at the age of 4 years or after, lasts much longer, and, instead of a cherry-red spot, it exhibits other retinal changes, mainly retinitis pigmentosa. While the infantile form of Tay-Sachs disease is easy to diagnose, the juvenile form always remains undiagnosed and is considered a very rare disease. Sjögren showed that this is not the case. By studies of fifty cases of blind children in various stages of the disease with especial reference to heredity and family occurrence and the chronological development of the neurologic signs and symptoms, he was able to prove beyond doubt that this form of amaurotic idiocy is quite common, at least in Sweden, and that it possesses not only familial but also certain hereditary features. Sjögren could show that lesions of the central nervous system in the nature of dementia paralytica, cerebral palsies, cerebellar ataxia, and extrapyramidal tract involvement associated with retinitis pigmentosa strongly suggest amaurotic family idiocy. The latter may be diagnosed even in cases in which retinitis pigmentosa is a solitary phenomenon. There is no other monograph on amaurotic family idiocy in existence that is so rich in new observations, so scholarly and so important not only to the science of neuropsychiatry but also to that of heredity.

**The Sign of Babinski: A Study of the Evolution of Cortical Dominance in Primates.** By John F. Fulton, Sterling Professor of Physiology in the Yale University School of Medicine, and Allen D. Keller, Professor of Physiology and Pharmacology in the School of Medicine, University of Alabama. Cloth. Price, $5. Pp. 165, with 66 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

This expensive monograph on a single neurologic sign will hardly interest any one besides the clinical neurologist. The expense of the book is no doubt largely due to the illustrations. The value and necessity perhaps of using the primates in the prosecution of neurologic studies of human significance is emphasized. The authors furthermore have "attempted a systematic comparison of human reflexes, normal and pathological, with the corresponding reactions in representatives below man." In this experimental study, monkeys, baboons, gibbons and chimpanzees were used. These studies showed "that destruction of pyramidal pathways in lower primates such as the macaque and mangabey does not cause Babinski's sign to appear; in intermediate primates such as the baboon the plantar reflex is altered on destruction of the pyramidal pathways, and in the highest forms, including the chimpanzee and man, a small cortical lesion restricted to the motor representation of the lower extremity gives rise to the response. It is therefore justifiable to conclude that in the higher primates the sign of Babinski is associated with isolated destruction of the pyramidal pathways." In the appendixes to the book are given details on the anesthesia, surgery, electrosurgical methods and after-care of the animals, all of which is of the utmost value to the experimental physiologist.

**L'angine de poitrine: Formes cliniques, traitement médical et chirurgical.** Par Camille Lian, professeur agrégé à la Faculté de médecine de Paris. Avec la collaboration de MM. A. Blondel, G. Huret, M. Marchal, assistants à l'Hôpital Tenon, et H. Weitl, chirurgien des hôpitaux. Paper. Price, 55 francs. Pp. 429, with 32 illustrations. Paris: Masson & Cie, 1932.

Lian starts out with a statement that angina pectoris is not a disease but a syndrome. It is a symptom complex based on a clinical picture and not on anatomic changes. The volume is largely given over to a defense of this thesis. It is robbed, therefore, of much value as a judicial consideration of facts because the author is always in the attitude of a special pleader. He admits that a large majority of cases of angina pectoris have as a basis an anatomic obstructive lesion in the coronary artery. Yet because of a resemblance in symptoms he puts into the same group not only the classic cases of angina of effort and acute coronary thrombotic occlusion but such diverse conditions as some cases of rheumatic endocarditis, paroxysmal tachycardia, gallstones and left-sided thoracobrachial neuralgia, together with so-called neurotic pseudo-angina, tobacco angina, and so on. Acute coronary thrombosis is classed as acute febrile angina pectoris. This subject, by the way, is in general well described and there is a good historical introduction. Another weakness of the author is his penchant for classification. Some of his schematic descriptions are helpful to the

memory but are not in strict accord with facts. Here and there also there are rather childish discussions over trivial claims of priority. There are many minor criticisms that might be made. Heberden's 100 cases were reported not in 1802 but in 1782. Heberden died in 1801. Allbutt and Mackenzie protested as vigorously as did Lian against the use of the term false angina, yet Allbutt's name is not in the bibliography. His volumes on angina pectoris were published in 1915. The case histories are not always convincing. Once Lian concludes that a painful seizure was due to the gallbladder because, when medicine was given for the relief of gallbladder pain, the pain stopped. Yet in spite of faults, some of which seem fundamental, there is much in the volume that is informing and stimulating. The attacks on the views of others are sometimes well made and call for defense by the advocates of views opposed to those of the author. Some of the pictures of typical and atypical cases are well drawn. The chapter on treatment will be found helpful, though the use of some of the remedies advocated is not justified on either theoretical or practical grounds.

**Our Children: A Handbook for Parents.** Edited by Dorothy Canfield Fisher and Sidonie Matsner Gruenberg. Prepared and sponsored by the Child Study Association of America. Cloth. Price, $2.75. Pp. 348. New York: Viking Press, 1932.

The editors of this symposium have carefully selected articles by twenty-nine leading specialists in the fields of child training and parental guidance. Every phase of the subject is discussed and the material is presented in the order of the child's chronological age. The essays are divided into four sections, on the child's growth and development, the child at home, the child at school, and the child in the outside world. The value of the volume lies in the fact that it is a complete account of current thought and present-day opinion. The articles are short but frank and precise. They provide a valuable survey for those not well acquainted with the subject and a good review for those already well versed in the field. The chapter on sex education, by Benjamin C. Gruenberg, is particularly good in its completely frank discussion and information on this subject. The value of the text is enhanced by a carefully selected bibliography after each chapter, so that the reader may amplify the information on any subject in which he is interested. The book is highly recommended to physicians and those who are interested in obtaining a concise and authoritive presentation of the current thought on child training and parental guidance.

**L'hypotension artérielle dans les maladies chroniques.** Par Gaston Giraud, professeur à la Faculté de médecine de Montpellier. Paper. Price, 40 francs. Pp. 259. Paris: Masson & Cie, 1931.

This excellent volume presents a careful analysis of all the many chronic disturbances that may be associated with arterial hypotension. There is little discussion of primary or constitutional hypotension. An effort has been made to emphasize the mechanism of the production of hypotension by tabulation of the various factors involved; for example, general systolic hypotension is attributed to diminution of the circulating blood volume, which may be secondary to (*a*) intracardiac disease, (*b*) extracardiac pressure on the circulatory apparatus, (*c*) cardiac arrhythmias, (*d*) myocardial weakness or (*e*) peripheral difficulties (as in shock). Some of these divisions appear somewhat arbitrary. Systolic and diastolic hypotension are considered more or less separate phenomena. The major portion of the book deals with the relationship of secondary arterial hypotension with other diseases. Diseases of the heart, blood vessels, blood and nervous system, endocrinologic disturbances and respiratory, gastro-intestinal and renal diseases are all considered in turn. Parasitic infection, chronic intoxications, malnutrition and cachexia and cancer are also discussed. In brief, the discussion centers about the many chronic and debilitating diseases in which hypotension is only a part of the clinical picture. Not infrequently hypotension is an important factor in these diseases, but perhaps as frequently it is merely coincidental and its significance most limited. Certainly hypotension is not of great moment in hepatic cirrhosis, diabetes, gout, carbon monoxide poisoning or carcinomatosis. The material is well presented. The page format lends itself to rapid reference. The monograph is designed more for reference than for consecutive studious reading. There is a bibliography of 418 titles; the great majority are naturally from European literature. Unfortunately, the bibliographic data are not as complete as in American literature: in most instances the page of the article is not stated, nor is the volume of the periodical given. The book can be recommended as a reference volume tabulating the clinical relationships of secondary hypotension to the many disease conditions in which it may appear.

**Pictorial Midwifery.** By Comyns Berkeley, M.A., M.C., M.D., Consulting Obstetric and Gynæcological Surgeon to the Middlesex Hospital. Illustrated by Georges M. Dupuy, M.D. Second edition. Cloth. Price, $3. Pp. 172, with 257 illustrations. Baltimore: William Wood & Company, 1932.

The art of brief but adequate expression is exemplified in this excellent little book, which covers all the essentials of practical obstetrics. As indicated by the title, it is an atlas, well supplied with amply descriptive legends. The illustrations are chiefly line drawings in black and white well suited to the text. The two colored plates are excellent; one illustrates a full and clear description of the fetal circulation, with explanatory drawings. The authors would have done well to omit the illustration on page 138 showing the method of administration of saline solution into both breasts. This practice has long since been replaced by hypodermoclysis in safer portions of the body, such as the thighs, flanks or axillary regions. With this one exception the book is heartily recommended to nurses, students and practitioners of obstetrics as well as to midwives, for whom the book was prepared.

**Précis de pathologie médicale.** Par F. Bezançon, Marcel Labbe, Léon Bernard, J.-A. Sicard et A. Clerc. Tome V: Maladies du sang et des organes hématopoïétiques. Par P. Émile Weil, médecin de l'Hôpital Tenon, et Marcel Bloch, chef de laboratoire à la Faculté de médecine de Paris. Maladies des reins. Par Pasteur Vallery-Radot, professeur agrégé à la Faculté de médecine de Paris. Third edition. Cloth. Price, 70 francs. Pp. 779, with 169 illustrations. Paris: Masson & Cie, 1932.

The fifth volume of this series deals with diseases of the blood-forming organs and the kidney. The first part of the book is concerned with clinical hematology. There is a concise but comprehensive discussion on the composition and physiology of the blood. Embryology and physiology of the blood-forming organs are considered next. The authors then attempt to show at what point the pathologic modifications of the blood are intimately correlated with pathologic modifications of the blood-forming organs. The conception of blood dyscrasias as expressed by the authors is broad. They emphasize the fact that the study of the blood is only a means of discerning disturbances in other organs or tissues. Morbid hematology is discussed, but the point of view presented is functional. Such a presentation obviously involves the frequent use of hypotheses and speculation, but it has the merit of making the isolated facts assume a dynamic value. This section is well illustrated for a small textbook and enough fundamental discussion of histology and physiology is available to make a comprehensive clinical correlation. The second section is devoted to clinical renal pathology. The author of this section has made a definite effort to correlate the newer physicochemical studies of nephritis with the clinical aspects of the disease. The material in this chapter has been completely revised to correspond with the most recent developments in the subject. Chapters on the recent work on the pathology and pathologic physiology of edemas, hypertension, acidosis and nephrosis have been added. Both sections of this volume are well written. They are concise but contain a fund of essential information. Students and physicians will find this information engaging as well as instructive.

**Lehrbuch der physiologischen Chemie in Vorlesungen.** Von Emil Abderhalden, Prof. Dr. med. et phil. h. c., Direktor des Physiologischen Institutes der Universität Halle a. d. S. Sixth edition. Paper. Price, 40 marks. Pp. 852, with 24 illustrations. Berlin: Urban & Schwarzenberg, 1931.

This excellent and complete revision of the previous lehrbuch, like the earlier editions, is intended to cover the biochemistry of mammals and mainly of man with emphasis on its application to modern medicine. The material is presented in thirty-eight well organized and exceedingly entertaining lectures. The reader is first introduced to the subject by three lectures of general character with the final emphasis on the synthesis of

carbohydrates in plants. Then follows the excellent biochemical treatment, including digestion and metabolism, of lipins, carbohydrates and proteins. Special chapters are added on the porphyrins, nucleic acids, enzymes, vitamins and mineral metabolism. The concluding chapters present more comprehensive and coordinated treatments of the quantitative aspects of metabolism, of specific needs, of dynamic action of foods, and of temperature regulation. The entire treatment is more biologic than chemical but is well balanced for the medical student. Much new and often amusing information is given in a delightful style. The general plan of the work calls for considerable repetition, which no doubt adds to its value as a textbook for students. Of particular importance are the numerous references given at the close of each chapter and the excellent subject index.

**The Early Diagnosis of the Acute Abdomen.** By Zachary Cope, B.A., M.D., M.S., Surgeon to St. Mary's Hospital, Paddington. Sixth edition. Cloth. Price, $3.25. Pp. 248, with 30 illustrations. New York & London: Oxford University Press, 1932.

This manual, though small, covers the field thoroughly and is helpful in forming a correct opinion in evaluating the puzzling symptoms present in acute abdominal disease. A thorough examination and a careful early diagnosis are emphasized. The diagnosis and differential diagnosis of appendicitis is especially well stated, and the importance of an early operation is stressed. The acute symptoms in pregnancy and the puerperium and their diagnostic significance are covered in a thorough manner. The chapter on other diseases that may simulate acute disease of the abdomen and not demand surgical intervention is especially well stated and has a complete table, which should help the student to avoid pitfalls. The illustrations and diagrams in the text are ample and clear.

**Handbuch der normalen und pathologischen Physiologie mit Berücksichtigung der experimentellen Pharmakologie.** Herausgegeben von A. Bethe G. v. Bergmann, G. Embden und A. Ellinger. Band XVIII: Nachträge und Generalregister zu Band I-XVIII. Paper. Price, 98 marks. Pp. 764, with 7 illustrations. Berlin: Julius Springer, 1932.

With the eighteenth volume the herculean task of the editors and collaborators of critically compiling this handbook is over. Ten years has elapsed since the task was begun. As a result, material additions to the knowledge then available have been published. Part of this material, incorporated in the present volume by some of the collaborators, comprises 473 pages of text, the remaining 291 pages consisting of the general index to all the volumes. Bound, the entire set occupies a trifle over 4 feet of shelf space. Aside from its physical size we cannot refrain from again recommending this immensely valuable bibliographic and informational tool to all institutions, be they hospitals, research laboratories or libraries. For years to come this reference work will be the source book of information to every biologist who is physiologically minded. In these times, particularly, no single worker can perhaps afford to own the set. Institutions of higher learning, as well as hospitals and libraries, owe it to their research workers and readers to have this complete set readily available. It should be added, however, that individual volumes can be purchased.

**Praktische Diätetik mit über 500 Kochrezepten für diätetische Behandlung für Ärzte und Patienten.** Von Geh. Hofrat Dr. L. Roemheld, Sanatorium Schloss Hornegg. Third edition of "Praktischen diätetischen Kochbuchs" by Dr. Curt Pariser. Cloth. Price, 5.90 marks. Pp. 216. Leipzig: Fischers medizinische Buchhandlung, 1933.

As the author points out, this book is not considered to be another addition to the numerous books of dietetics already existing but attempts to be a reliable guide for the patient who is confined to a dietary regimen without being familiar with medical terms and culinary arts. According to this purpose, calories and weight measures are abolished entirely and spoons, glasses and plates are frequently used as terms. While the book does not bring anything new in conception of disease and dietary regimen, the physician may find numerous valuable and practical hints as to variety and preparation of food within a calculated diet. This holds particularly for the diseases of the gastro-intestinal tract, while nephritic and diabetic diets are discussed somewhat less in detail. Liver diet, basic and acid forming diet, ketogenic diet, are mentioned but limited to a few lines. The third and largest part of the book contains numerous and precise instructions for preparing the various forms of food, from which much valuable information may be gained. Whether, however, a great deal of this food thus prepared in a way suitable for German patients might appeal to the taste of American patients remains to be seen.

**The Sanitation of Water Supplies.** By Murray P. Horwood, Ph.D., Associate Professor, Department of Biology and Public Health, Massachusetts Institute of Technology. Cloth. Price, $3. Pp. 181, with 26 illustrations. Springfield, Ill.: Charles C. Thomas, 1932.

This is an interesting and clearly written description of water supplies and their relation to the public health. While little appeal will be made to the engineer because of the elementary character of the presentation, the material is available for the student who is interested in the subject from a general rather than a special point of view. All phases are given consideration, including sources and consumption of water, relation of water to disease, and methods of purification. Unfortunately, many of the tables have not been brought down to the present although in some instances the material is known to be readily available. For example, no figures for water consumption are given later than 1920. The volume is attractively printed and illustrated.

**Die Schwangerschaftsdiagnose aus dem Harne: Praktische und wissenschaftliche Ergebnisse.** Von Dr. S. Aschheim, Honorarprofessor an der Universität Berlin. Second edition. Paper. Price, 8.40 marks. Pp. 102, with 11 illustrations. Berlin: S. Karger, 1933.

This monograph was published on the fifth anniversary of the author's discovery of the presence of large amounts of hormone in the urine of pregnant women, a discovery that led to the Aschheim-Zondek biologic test for early pregnancy. In the present book, the author discusses the various biologic methods for detecting pregnancy, the original technic of Aschheim and Zondek, and the various modifications of it. He also takes up the many practical applications of the test in conditions other than normal pregnancy, such as intra-uterine death of the ovum, extra-uterine gestation, hydatidiform mole, chorionepithelioma and illnesses in nonpregnant individuals. The sources of error and the forensic significance of the test are also discussed. From the literature Aschheim collected reports of 8,086 cases in which his test was used and it proved to be reliable in 98 per cent. He also collected reports of 1,358 cases in which rabbits were used instead of mice, and the incidence of error in these cases was 1.7 per cent. The contents of this monograph as well as the companion one by Zondek should be familiar to every gynecologist and obstetrician, for they represent epoch-making scientific research.

**An Arctic Safari: With Camera and Rifle in the Land of the Midnight Sun.** By Richard L. Sutton, M.D., Sc.D., LL.D., Professor of Dermatology, University of Kansas. Cloth. Price, $2.25. Pp. 199, with illustrations by the author and by Richard L. Sutton, Jr., A.M., M.D., and Emmy Lou Sutton, F.R.G.S. St. Louis: C. V. Mosby Company, 1932.

This is the fourth of a series of adventurous expeditions in which the author and his family explored the land of the midnight sun in quest of big game. There are many interesting encounters with polar bears, walruses, seals and arctic birds, in which both the camera and the rifle were effectively used. Life aboard a Norwegian sealer amid icebergs and floes is described in the author's inimitable manner. There are many suggestions regarding transportation and equipment that hunters in this region will find invaluable in planning their trips. The photography is excellent.

**Die Wechselwirkungen der Blutdrüsen.** Von Erich Leschke, a. o. Professor für innere Medizin an der Universität Berlin. Paper. Price, 5.50 marks. Pp. 71. Leipzig: Curt Kabitsch, 1933.

This pamphlet, dedicated to Harvey Cushing, is a brief, if not topical, summary of facts and theories in regard to the functional interrelation of the endocrine glands. Consequently it presupposes detailed information regarding the action of each gland per se in health and in disease. The subject of endocrine and hormone interrelation has long been a fertile field for speculations and the catch basin for unsolved difficulties in many disturbances in disease. We are slowly emerging from fog and theory into the daylight of proved facts. Because of the relative feebleness of critical judgment displayed by the author of the present pamphlet, it cannot be classed as a contribution of significance in this difficult subject of biology and medicine.

# Medicolegal

## Husband Liable for Medical Service Rendered Wife

*(Lowenstein v. Widdicomb (Mo.), 52 S. W. (2d) 1044)*

The plaintiff physician operated on Mrs. Widdicomb in September, 1919, and sent a bill to her and her husband for $250. In December, 1919, the wife paid him $50 on the account. In March and June, 1920, the plaintiff treated the wife for an ailment not connected with the operation. Thereafter he sent another statement showing a credit for the $50 paid and including an additional charge of $6 for the last treatments. The plaintiff sued the patient and her husband for $206 in June, 1925. From a judgment for the plaintiff, the defendants appealed to the St. Louis court of appeals.

Medical attention, said the court of appeals, is a necessity for which the husband, so long as he and his wife are living together, is under legal obligation to supply his wife. Since there was evidence that the defendants were living together, it is immaterial whether or not the defendant husband engaged the plaintiff to perform the operation or whether or not he had any knowledge of it before it was performed. There is an implied contract on the part of the husband to pay for this necessity, unless it can be shown that the physician relied on a separate contract of the wife or for some other reason relied on the wife's responsibility alone.

Both defendants contended that the action, at least with respect to the balance of $200 unpaid on the operation, was barred by the statute of limitations, which apparently denied recovery on claims more than five years old. But, said the court, the statute had not run against the account. There was a relationship here of physician and patient. Services were being rendered over a period of time. The account was carried over from the first item pertaining to the operation and the balance was made up after the payment of the $50. Then the account carried forward this balance with the addition of the charges for subsequent treatments. There was extant one running account. This is not a case in which the parties have discussed their accounts and settled them as to the amount due. There never was any question of adjustment as to the amount. The first bill was for $250 for the operation, and the wife paid $50 on account. The idea of "a balance being struck" was never in this case. The bill was credited with the $50 payment, and as the wife came again, the bill was increased by the additional charges for further medical attention. Since the last entry was not barred by the statute, the entire account is not barred. To hold otherwise, concluded the court, would be a denial of the legal and substantive rights of the plaintiff. The judgment in favor of the plaintiff was accordingly affirmed.

**Workmen's Compensation Acts: Pneumonia Attributed to Inhalation of Gasoline Vapor.** — An employee in the course of his employment inhaled vapors from a gasoline spraying machine operated by other employees. He became sick and dizzy and went home. Two days later, pneumonia developed. Attributing the pneumonia to the vapors from the gasoline spraying machine, he sought compensation, which the compensation commissioner allowed. The employer appealed to the district court for Hall county, which disallowed the claim and the employee appealed to the Supreme Court of Nebraska. The determining question on this appeal, said the Supreme Court, is whether or not the employee proved by a preponderance of the evidence that vapors from the gasoline spray caused the pneumonia. On behalf of the employee, the attending physician testified that gasoline might produce a lung irritation, that anything that will produce a lung irritation will produce pneumonia. He testified that it was possible for the inhalation of gasoline fumes to produce pneumonia but could not say that it did cause it. A physician called by the employer testified that the inhalation of the gasoline vapor did not cause the pneumonia. Other employees, said the court, who used the spraying machine at close range were not injured by the fumes. Since, in the opinion of the Supreme Court, the employee did not prove by a preponderance of the evidence that his injury was caused by an industrial accident, the judgment of the lower court, disallowing compensation, was affirmed.—*Townsend v. Loeffelbein (Neb.), 244 N. W. 418.*

# Society Proceedings

## COMING MEETINGS

American Medical Association, Milwaukee, June 12-16. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Academy of Pediatrics, Chicago, June 12-13. Dr. Clifford G. Grulee, 636 Church Street, Evanston, Ill., Secretary.

American Association for the Study of Goiter, Memphis, Tenn., May 15-17. Dr. J. R. Yung, 670 Cherry Street, Terre Haute, Ind., Secretary.

American Association for the Study of the Feeble-Minded, Boston, May 31-June 3. Dr. Groves B. Smith, Beverly Farms, Godfrey, Ill., Secretary.

American Association for Thoracic Surgery, Washington, D. C., May 9-11. Dr. Duff S. Allen, 3720 Washington Boulevard, St. Louis, Secretary.

American Association of Genito-Urinary Surgeons, Washington, D. C., May 8-10. Dr. Henry L. Sanford, 1621 Euclid Avenue, Cleveland, Secretary.

American Association of Pathologists and Bacteriologists, Washington, D. C., May 2-3. Dr. Howard T. Karsner, 2085 Adelbert Road, Cleveland, Secretary.

American Bronchoscopic Society, Washington, D. C., May 10. Dr. Edwin McGinnis, 104 South Michigan Boulevard, Chicago, Secretary.

American Climatological and Clinical Association, Washington, D. C., May 9-10. Dr. Arthur K. Stone, Auburn Street, Framingham Center, Massachusetts, Secretary.

American Dermatological Association, Chicago, June 8-10. Dr. W. H. Guy, 500 Penn Avenue, Pittsburgh, Secretary.

American Gastro-Enterological Association, Washington, D. C., May 8-9. Dr. John Bryant, 311 Beacon Street, Boston, Acting Secretary.

American Gynecological Society, Washington, D. C., May 8-10. Dr. Otto H. Schwarz, 630 South Kingshighway, St. Louis, Secretary.

American Laryngological Association, Washington, D. C., May 9-10. Dr. George M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Chicago, June 8-10. Dr. Robert L. Loughran, 33 East 63d Street, New York, Secretary.

American Neurological Association, Washington, D. C., May 9-11. Dr. Henry A. Riley, 117 East 72d Street, New York, Secretary.

American Ophthalmological Society, Washington, D. C., May 8-10. Dr. J. Milton Griscom, 2213 Walnut Street, Philadelphia, Secretary.

American Orthopedic Association, Washington, D. C., May 8-10. Dr. DeForest P. Willard, 1916 Spruce Street, Philadelphia, Secretary.

American Otological Society, Washington, D. C., May 8-9. Dr. Thomas J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, Washington, D. C., May 8-10. Dr. Hugh McCulloch, 325 North Euclid Avenue, St. Louis, Secretary.

American Proctologic Society, Chicago, June 12-13. Dr. Frank G. Runyeon, 1361 Perkiomen Avenue, Reading, Pa., Secretary.

American Psychiatric Association, Boston, May 29-June 2. Dr. Clarence O. Cheney, 722 West 168th Street, New York, Secretary.

American Society for Clinical Investigation, Washington, D. C., May 8. Dr. H. L. Blumgart, Beth Israel Hospital, Boston, Secretary.

American Society of Clinical Pathologists, Milwaukee, June 9-12. Dr. A. S. Giordano, 531 North Main Street, South Bend, Ind., Secretary.

American Surgical Association, Washington, D. C., May 8-10. Dr. Vernon C. David, 59 East Madison Street, Chicago, Secretary.

Arkansas Medical Society, Hot Springs, May 2-4. Dr. William R. Bathurst, 213 West Second Street, Little Rock, Secretary.

Association for the Study of Allergy, Milwaukee, June 12-13. Dr. Warren T. Vaughan, 808 Professional Building, Richmond, Va., Secretary.

Association for the Study of Internal Secretions, Milwaukee, June 12-13. Dr. F. M. Pottenger, 1930 Wilshire Boulevard, Los Angeles, Secretary.

Association of American Physicians, Washington, D. C., May 9-10. Dr. James H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Del Monte, April 24-27. Dr. Emma W. Pope, 450 Sutter Street, San Francisco, Secretary.

Conference of State and Provincial Health Authorities, Washington, D. C., June 5-6. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.

Congress of Physicians and Surgeons of North America, Washington, D. C., May 9-10. Dr. John T. King, Jr., 1210 Eutaw Place, Baltimore, Secretary.

Connecticut State Medical Society, Hartford, May 24-25. Dr. Charles W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

District of Columbia, Medical Society of the, Washington, May 3. Dr. C. B. Condalin, 1718 M Street N. W., Washington, Secretary.

Florida Medical Association, Hollywood, May 2-4. Dr. Shaler Richardson, 111 West Adams Street, Jacksonville, Secretary.

Georgia, Medical Association of, Macon, May 9-12. Dr. Allen H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.

Illinois State Medical Society, Peoria, May 16-18. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

Iowa State Medical Society, Des Moines, May 10-12. Dr. Robert L. Parker, 3510 Sixth Avenue, Des Moines, Secretary.

Kansas Medical Society, Lawrence, May 2-4. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 25-26. Dr. Walter Dent Wise, 1211 Cathedral Street, Baltimore, Secretary.

Massachusetts Medical Society, Boston, June 5-7. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Women's National Association, Milwaukee, June 11-12. Dr. Inez A. Bentley, 45 Gramercy Park, New York, Secretary.

Minnesota State Medical Association, Rochester, May 22-24. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.

Mississippi State Medical Association, Jackson, May 9-11. Dr. T. M. Dye, Clarksdale, Secretary.

Missouri State Medical Association, Kansas City, May 1-4. Dr. E. J. Goodwin, 634 North Grand Boulevard, St. Louis, Secretary.

Nebraska State Medical Association, Omaha, May 23-25. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.

New Hampshire Medical Society, Manchester, May 16-17. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.

Oklahoma State Medical Association, Oklahoma City, May 15-17. Dr. C. A. Thompson, Commercial National Bank Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 167 Angell Street, Providence, Secretary.
Society for the Study of Asthma and Allied Conditions, Washington, D. C., May 6. Dr. W. C. Spain, 116 East 53d Street, New York, Secretary.
South Dakota State Medical Association, Huron, May 15-17. Dr. John F. D. Cook, Langford, Secretary.
Texas, State Medical Association of, Fort Worth, May 8-11. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Charleston, May 22-24. Mr. Joe W. Savage, Professional Building, Charleston, Executive Secretary.

# *Current Medical Literature*

## AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

### Alabama Medical Association Journal, Montgomery

**2:** 253-296 (Jan.) 1933

*Surgical Treatment of Harelip and Cleft Palate. M. Skinner, Selma.—p. 253.
*Early Hemorrhages of Pregnancy. T. M. Boulware, Birmingham.—p. 260.
Mobile's Gifts to Medicine and Public Health. J. N. Baker, Montgomery.—p. 264.
Etiology of Lichen Planus. F. E. Stockton, Birmingham.—p. 266.
Tuberculin Testing. P. W. Auston, Opelika.—p. 269.
Case of Pellagra Treated with Insulin. G. Walsh and W. G. Morgan, Fairfield.—p. 274.
Status of Diphtheria Immunity in Typical Alabama County. O. L. Chason, Montgomery.—p. 275.
Electrocardiographic Interpretation of Cardiac Arrhythmias. T. K. Lewis, Birmingham.—p. 279.

**Surgical Treatment of Harelip and Cleft Palate.**—Skinner states that the treatment of complete harelip should start the day the baby is born, although the operation to close the lip should not be undertaken before one month or six weeks after birth. If, from birth, the lip is kept approximated by adhesive strapping until the time of operation, one will be amazed at the narrowing that will be effected in the cleft. The author's technic is as follows: Having disposed of the cleft in the alveolus by a modification of the Langenbeck operation, he puts the lip under tension by the use of Allis forceps and freely divides the attachment of the lip to the alveolus in order to mobilize the lip. With slight traction on the Allis forceps he puts the lip under tension and estimates the proposed incisions by calipers. He denudes the margins of the cleft by using a sharp pointed knife to perforate the lip about one-eighth inch from the margin of the cleft. He then sutures the wound with interrupted sutures of fine, waxed silk, the sutures embracing all the layers of the lip except the derma. He first places the suture to close the nostril. Care must be exercised in its placement. The next stitch in importance is the one approximating the lip at the vermilion border. He places all the sutures, except those coapting the vermilion, before he ties any of them. He ties these silk sutures on the oral side of the wound. After he has tied them he trims the vermilion so that, when the margins are approximated, there will be a slight but definite fulness at the line of suture. Subsequent contracture of the lip will erase the pout and, if it is not provided for, contracture will cause a definite notch deformity. He closes the skin and lip margin with interrupted horsehair, taking care to avoid infolding of the skin. For double harelip the author uses the Koenig operation.

**Early Hemorrhages of Pregnancy.**—Boulware points out that incomplete abortion is the most common cause of uterine hemorrhage during the early months of pregnancy. Contrary to the rather prevalent conservative policy of nonintervention, he believes that the uterus should be evacuated in every case of frank incomplete abortion. The term "evacuation" is sharply differentiated from ordinary curettage. He reports a series of 437 cases of incomplete abortion: a study of the patients' admission temperatures, leukocyte counts and sedimentation rates indicated that these observations are not absolutely trustworthy guides to the presence or absence of actual infection. The author discusses "toxic absorption," as productive of alterations in temperatures and laboratory observations. He believes that intravenous mercurochrome in dosages of from 5 to 15 cc. of a 1 per cent solution is often of value in septic cases. He gave this solution to twenty-eight patients in his series. Moderate reactions occurred in twelve cases, severe reactions in two. There was no kidney damage as demonstrable by urinalysis, and the occasional diarrhea was transitory. In many cases the clinical improvement was striking, in others it was disappointing. As one's efforts in treating a case of true septic abortion are somewhat limited, a trial of this drug seems justified.

### American Journal of Anatomy, Philadelphia

**52:** 1-151 (Jan. 15) 1933

Studies of Living Nerves: II. Activities of Ameboid Growth Cones, Sheath Cells and Myelin Segments, as Revealed by Prolonged Observation of Individual Nerve Fibers in Frog Tadpoles. C. C. Speidel, Charlottesville, Va.—p. 1.
Later Stages of Developmental Growth in Hyena Skull. T. W. Todd and F. P. Schweikher, Cleveland.—p. 81.
Innervation of Human Lung. O. Larsell and R. S. Dow, Portland, Ore.—p. 125.
Relationship Between Chief and Colloid Cells of Acinar Epithelium of Thyroid Gland. B. Webster, New Orleans.—p. 147.

### American Journal of Medical Sciences, Philadelphia

**184:** 753-900 (Dec.) 1932

Blood Volume in Chronic Arthritis. M. I. Sparks and R. L. Haden, Cleveland.—p. 753.
Streptococcic Agglutination in Chronic Arthritis and Acute Rheumatic Fever. B. J. Clawson, M. Wetherby, E. H. Hilbert and H. E. Hilleboe, Minneapolis.—p. 758.
*Monocytic Leukemia with Data on Individuality and Development of Monocyte. G. E. Farrar, Jr., and J. D. Cameron, Ann Arbor, Mich.—p. 763.
*Acute Monocytic Leukemia: Case with Partial Autopsy. V. P. Sydenstricker and T. B. Phinizy, Augusta, Ga.—p. 770.
*Hematopoietic Response in Pernicious Anemia Following Intramuscular Injection of Gastric Juice. R. S. Morris, L. Schiff, G. Burger and J. E. Sherman, Cincinnati.—p. 778.
Pericardial Effusion: Clinical Study. P. D. Camp and P. D. White, Boston.—p. 782.
Nonfatal Stab Wounds of Ventricles: Electrocardiographic Signs of Coronary Thrombosis and Absence of Anginal Pain. W. B. Porter and I. A. Bigger, Richmond, Va.—p. 799.
*Use of Bacteriophages in Wound Infections and in Bacteremias. W. J. MacNeal, New York.—p. 805.
Observations on Effects of Oxygen Therapy: II. Changes in Circulation and Respiration. L. N. Katz, W. W. Hamburger and S. H. Rubinfeld, Chicago.—p. 810.
Id.: III. Blood Chemical Changes. D. J. Cohn, L. N. Katz, S. Soskin and W. W. Hamburger, Chicago.—p. 818.
Ovarian Follicle Hormone Therapy in Ovarian Insufficiency and Menopause. B. Webster, New York.—p. 822.
Hyperperistaltic Electrographic Effects. I. H. Tumpeer, with technical assistance of Bessie Phillips, Chicago.—p. 831.
*Pellagra: Improvement While Taking So-Called "Pellagra-Producing" Diet. T. D. Spies, Cleveland.—p. 837.
Absorption from Pleural Cavity of Dogs: II. Lymphatic System. W. S. Lemon and G. M. Higgins, Rochester, Minn.—p. 846.

**Monocytic Leukemia.**—Farrar and Cameron report a case of monocytic leukemia which began with malaise, fever, chills, weakness and gingivitis. A period of marked improvement with residual weakness followed. The patient was first seen during his second exacerbation of symptoms when a necrotic stomatitis developed. Following several transfusions, a second remission occurred. A third exacerbation of symptoms followed, which rapidly progressed to a fatal terminal condition twenty-eight weeks after the onset of the disease. The blood picture changed from one with 40,000 mature monocytes (transitional forms) per cubic millimeter through a stage of symptomatic remission in which the white blood count reached a normal level and the differential count revealed the round nucleus type of mature monocytes in normal numbers. Before the rise in the white blood count with the third exacerbation of symptoms, a less differentiated type of monocyte appeared in the blood films in increasing numbers. Immature monocytes rapidly increased in numbers and immaturity until the terminal blood film showed 180,000 primitive blasts per cubic millimeter, the monocyte blast, whose appearance and characteristics are different from those of the myeloblast, and the lymphoblast. The progressive changes in the maturity of the monocytes in the blood of the authors' patient demonstrate

a third definite leukocyte series — mature monocyte, young monocyte, monocyte blast — which does not involve the reticulo-endothelial system.

**Acute Monocytic Leukemia.**—Sydenstricker and Phinizy report a case of acute monocytic leukemia. Although multiple infections were present, negative cultural studies and the course of the disease seemed to eliminate pyogenic infection as a cause of the blood picture. The type cell in both mature and immature stages was adequately identified with peroxidase and supravital as well as the conventional stains. It was differentiated from cells of the myeloid and lymphatic series as belonging to the monocyte series. A direct derivation of the monocyte from the reticulo-endothelium offers a logical explanation of the occurrence of this type of leukemia.

**Hematopoietic Response in Pernicious Anemia.**—Morris and his associates gave normal human gastric juice, concentrated by distillation in vacuo, to patients with pernicious anemia. The injection of the equivalent of 450 cc. of gastric juice to a patient with 2.1 million red cells led to a reticulocytosis of 17.6 per cent in thirty-six hours. Twelve days after the injection, the red count and percentage of hemoglobin began to increase. Within the period of the next twelve days, the count increased by 1.5 million cells and the hemoglobin by 20 per cent. The count then remained stationary until further treatment was instituted. A second patient, who received intensive intramuscular treatment with Lilly's liver extract number 343, improved after this until the red count reached 4.1 million, where it remained for four weeks despite daily intramuscular injections of 4 cc. of the extract. Then, an intramuscular injection of the equivalent of 300 cc. of human gastric juice was given. Within fourteen days, the red count had increased to 5.1 million and the hemoglobin had risen from 76 per cent to 88 per cent when the patient was discharged. The reticulocytes rose from 0.5 per cent to 2.7 per cent within nine hours after the injection. The authors conclude that the results obtained in these patients prove the presence in normal gastric juice of a powerful bone marrow stimulant, one which produces not only a marked and rapid reticulocyte increase after intramuscular injection but also rapid maturation of the red cells. It seems probable that the temporary lack of addisin in the gastric juice is the cause of pernicious anemia.

**Bacteriophages in Wound Infections.**—MacNeal states that infected wounds, whether accidental or surgical, have been treated by bacteriophage in several instances with good success. When the infection is chiefly by Staphylococcus aureus, local applications of dressings wet with the staphylococcus broth bacteriophage filtrate usually bring about rapid improvement. The purulent exudate is washed away, healthy granulations appear, and the wound proceeds to prompt healing. Operative incisions in the abdominal wall that have become soiled with intestinal contents by perforation of the intestine have been treated by the application of large amounts of mixed bacteriophage preparations, including bacteriophages active against staphylococcus, colon bacillus, dysentery bacilli and Bacillus pyocyaneus. When blood stream infection is a sequel of a local staphylococcic wound infection, the author recommends the application of large quantities of the bacteriophage to the surface of the wound. At the same time, however, he undertakes the intravenous injection of the bacteriophage. For this purpose he employs a special filtrate prepared in a culture medium without protein and containing asparagin as the important source of nitrogen. This bacteriophage preparation does not of itself produce serious toxic symptoms in animals and it seems to be far less dangerous to the patient than is the filtrate of broth culture. Staphylococcic bacteremia is a disease with a high mortality and one does not undertake its treatment without recognizing that failure will be commonly encountered. He has, however, had an opportunity to observe some instances of actual recovery after repeated positive blood cultures in staphylococcic bacteremia. As a sequel to bacteremia one encounters metastatic localizations of the inflammatory process. The treatment of these localizations by bacteriophage presents serious difficulties, which have not been overcome, and at present it seems that surgical drainage when applicable will, as a rule, be required in order to offer any hopeful outlook for bacteriophage therapy. The author presents the records of seven patients in whom he employed bacteriophage therapy.

**Pellagra-Producing Diet.**—For his study Spies chose six patients, four of whom were white males and the other two were Negresses. All had a definite history of a low food intake, and three of the males and one of the females had a history of alcoholism. Five of the patients had stomatitis, four had diarrhea and anal lesions, and four had mild mental symptoms. Bilaterally symmetrical dermatitis characteristic of pellagra was found on the hands of all patients. Both females had vaginal ulcerations and large butterfly-shaped, symmetrical lesions of the vulva, thighs and anus, typical of pellagra. The reflexes were essentially normal in all patients. Each patient received a daily diet of 2,300 calories (carbohydrate, 1,700; protein, 110; fat, 490) consisting of cornmeal mush, cornmeal muffins, pork fat, maple syrup, polished rice, cornstarch pudding, coffee and sugar. This diet was administered from the time the patients entered the hospital until the skin lesions had cleared in all except one patient, who had partial improvement of the dermatitis, a gain of 5 pounds (2.3 Kg.) and a return of gastric acidity during the three weeks she tolerated the diet. Every effort was made to induce the patients to eat the full 2,300 calories. They were carefully watched and were not allowed any other nourishment. The author suggests the possibility of a secondary factor in the production of pellagra, perhaps analogous to the gastric defect of pernicious anemia. He does not recommend the indiscriminate continuous administration of such a restricted diet to patients presenting pellagra.

## American J. Obstetrics and Gynecology, St. Louis

**24:** 797-966 (Dec.) 1932

Relation of Placental Infarcts to Eclamptic Toxemia: Clinical, Pathologic and Experimental Study. R. A. Bartholomew and R. R. Kracke, Atlanta, Ga.—p. 797.
*Researches on Toxemias of Later Pregnancy. V. J. Harding and H. B. van Wyck, Toronto, Canada.—p. 820.
Relation of Anterior Lobe of Hypophysis to Genital Function. B. Zondek, Berlin, Germany.—p. 836.
Some Experiences in Diagnosis and Treatment of Congenital Anomalies of Female Genital Tract. B. C. Hirst, Philadelphia.—p. 843.
Fetal Mortality and Breech Presentation. D. G. Morton, San Francisco.—p. 853.
Results of Operations for Prolapse of Uterus and Bladder. G. M. Laws, Philadelphia.—p. 864.
*Pathology of Thyroid Gland Complicating Pregnancy. C. H. Frazier and H. F. Ulrich, Philadelphia.—p. 870.
Uncomplicated Prolapse of Ovary, Due to Elongation of Infundibulopelvic Ligament and Its Treatment. B. C. Hirst and I. Andrussier, Philadelphia.—p. 879.
Review of Five Hundred and Seventy Forceps Operations. M. A. Novey, Baltimore.—p. 882.
*Use of Barbiturates with Ether by Rectum: Preliminary Report. C. B. Lull, Philadelphia.—p. 888.
*Temporary Sterilization by Injection of Human Spermatozoa: Preliminary Report. M. J. Baskin, Denver.—p. 892.
Slowing of Fetal Heart and Its Relation to Fetal Placental Circulation. M. Leff, New York.—p. 898.
Indications for Sterilization. L. H. Douglass, Baltimore.—p. 903.
Ramifying Angiomyoma of Uterus: Report of Case. L. C. Pusch, Richmond, Va.—p. 907.
Adenosarcoma of Body of Uterus. L. Sophian, New York.—p. 911.
Artificial Pneumothorax and Pregnancy: Report of Two Cases. J. W. Cutler, Philadelphia.—p. 914.
Test for Ruptured Bag of Waters. M. M. Berlind, Brooklyn.—p. 918.
Rôle of Frontier America in Development of Cesarean Section. N. J. Eastman, Baltimore.—p. 919.

**Toxemias of Later Pregnancy.**—Harding and van Wyck state that their observations on the effect of added salt to the diet or on the use of hypertonic saline solutions show that the normal pregnancy remains normal and that the toxemic pregnancy has an exaggeration of symptoms. A study of many of the older and some of the more recently suggested forms of treatment shows that they cause the removal of water from the body or may be involved in some change in the internal distribution of water. The "edema" theory of Zangemeister at present offers the most unifying view of the toxemias of later pregnancy. It requires modification, however, to allow for the formation of edema in individual organs, apart from a generalized water retention, and for the possibility of internal changes in water distribution. Further progress might be made by a more intensive study of the atypical forms of toxemia and by a wider acceptance both in theory and in practice of the value of observations of weight during pregnancy. The variability of the toxemias of later pregnancy is in harmony with the assumption that they possess one origin and a multiplicity of symptoms.

**Pathology of Thyroid Complicating Pregnancy.**—According to Frazier and Ulrich, an appreciable response by the thyroid to the state of pregnancy is frequently noted. Hypothyroidism in a pregnant woman may cause miscarriage; or if a living baby is delivered, the baby may have cretinism or a goiter. The judicious administration of thyroid extract to pregnant, hypothyroid mothers will prevent these complications. The development of simple goiter during pregnancy does not interfere with the normal course of events. The use of iodine during pregnancy may prevent the development of simple goiter. Nodular goiters that threaten the life of the mother should be removed regardless of pregnancy. During pregnancy, thyrotoxicosis developed in 3.2 per cent of the women on whom thyroidectomy had been performed in the authors' clinic. They report the records of seven patients with toxic goiter, on whom thyroidectomy was performed during pregnancy. All the pregnancies went to term and the mothers were delivered of normal babies. Mild degrees of thyrotoxicosis during pregnancy may be controlled by the use of iodine. In cases in which severe degrees of thyrotoxicosis complicate pregnancy or in milder degrees of toxicity not controlled by iodine, thyroidectomy should be performed at once. The recurrence of thyrotoxicosis during pregnancy, subsequent to thyroidectomy for toxic goiter, may be prevented by the administration of iodine. The treatment of malignant tumors of the thyroid should be carried out without regard for an associated pregnancy.

**Use of Barbiturates with Ether by Rectum.**—Lull states that the good results obtaining by the use of the barbiturates with ether by rectum for the relief of pain during the first and second stage of labor warrant the continued use of these drugs. This method of sedation can be given earlier in the course of labor than most methods in vogue at the present time. Primiparous patients seem to respond more definitely than do multiparous. One who uses this procedure should be prepared to deliver the patient with outlet forceps at the termination of the second stage of labor. There is no contraindication to giving inhalation anesthesia to complete the delivery. There has been no harmful effect on the mother or the child. The injection should be given by a person who is particularly trained in the administration of rectal medication. Relaxation of the pelvic muscles seems to be better than under ordinary circumstances. Patients given this instillation cannot be depended on to cooperate during the second stage of labor because, if not entirely unconscious, they are mentally confused to the point of being irrational. In the author's limited experience this method of analgesia has proved satisfactory enough and not fraught with any danger, so that he will continue its use until a larger series has been collected.

**Temporary Sterilization by Injection of Human Spermatozoa.**—Baskin presents the results of the temporary sterilization of twenty women by the injection of human spermatozoa. He concludes that immunization of women with human spermatozoa is possible. The immunization lasts about one year. Revaccination at the end of the year prolongs the immunity for at least another year. The period of immunity and degree of immunity can be determined by the blood. Spermatoxic properties of cervical secretions are not constant. The injections are harmless to the patient. The technic has been as follows: After intercourse in which a condom was used, the semen was tied and brought to the office as soon as possible. One cubic centimeter of hexylresorcinol was added. The entire amount was drawn into a syringe and injected into the buttocks. No semen was used with a count of less than 80,000,000 per cubic centimeter; three injections were given seven days apart. The amounts of semen injected at each injection varied from 2 to 5 cc.

## American Journal of Orthopsychiatry, Menasha, Wis.

**3**: 1-94 (Jan.) 1933

Birth Lesion as Category of Mental Deficiency. E. A. Doll, Vineland, N. J.—p. 1.
Use of Transference in Dealing with Delinquents. S. Biddle, Philadelphia.—p. 14.
Relation of Maternal Overprotection to School Grades and Intelligence Tests. D. M. Levy, New York.—p. 26.
Significance of Emotional Attitudes in Psychoanalytic Situation. F. Alexander, Chicago.—p. 35.
Church and Individual Security. Bertha C. Reynolds, New York.—p. 44.
Weight and Skeletal Build. C. Rosenow, New York.—p. 55.
Time Element in Therapy. Jessie Taft, Philadelphia.—p. 65.

## Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

**29**: 1-144 (Jan.) 1933

Factors Influencing Types of Metastatic Carcinoma of Bone. E. E. Downs and W. S. Hastings, Philadelphia.—p. 1.
Cholecystographic Diagnosis of Neoplasms of Gallbladder. B. R. Kirklin, Rochester, Minn.—p. 8.
*Value of Roentgen Ray in Diagnosis of Renal Tuberculosis. C. A. Waters, Baltimore.—p. 17.
*Pyloric Stenosis with Hypertrophy of Pyloric Muscle in Adult. E. P. McNamee, Cleveland.—p. 24.
Chondrodystrophia Fetalis: Roentgen Study of Four Cases; Two in Father and Daughter; Emphasizing Epiphyseal Changes and Variants. P. O. Snoke, Lancaster, Pa.—p. 31.
Clinical Illustrations of Deep Roentgen-Ray and Radium Burns. J. S. Davis, Baltimore.—p. 43.
*Roentgen Therapy of Rheumatic Heart Disease: Review of Six Years' Experience. R. L. Levy and R. Golden, New York.—p. 79.
Roentgen Treatment of Lymphoblastoma (Hodgkin's Disease). K. R. McAlpin and R. Golden, New York.—p. 83.
Myelogenous Leukemia. E. L. Jenkinson, Chicago.—p. 91.
*Clinical and Radiotherapeutic Considerations of Follicular Lymphoblastoma. N. Rosenthal, W. Harris and A. Kean, New York.—p. 95.

**Roentgen Ray in Renal Tuberculosis.**—Waters points out that no urologic investigation for renal tuberculosis is complete without satisfactory roentgenograms and pyelograms of the urinary tract. The early roentgen observations in renal tuberculosis are "fringing" of the calices and possibly calcification in areas of cortical necrosis. His statistics show a diagnostic accuracy of 70 per cent in the pyelographic series. On the other hand, 40 per cent of the cases of known renal tuberculosis showed areas of cortical calcification in the roentgenogram. While the direct smear yielded only 55 per cent diagnostic accuracy, the guinea-pig inoculations yielded positive evidence in the other 45 per cent. There are no contraindications to pyelography in renal tuberculosis. Intravenous urography has so far not yielded the brilliant results hoped for, but with improvement in the injection material and technic it is possible that great diagnostic accuracy may be evolved.

**Pyloric Stenosis.**—It has been recognized since 1835 that hypertrophic pyloric stenosis occurs in the adults. McNamee suggests "idiopathic pyloric stenosis" as the term that will best identify this condition. The most characteristic roentgen observations are a concentric and elongated pyloric canal, widening of the pyloric sulcus and a constant, unchanging appearance of the pylorus. The diagnosis can be made by the correlation of the clinical manifestations and roentgen observations but not by the roentgen evidence alone. He reports two cases of hypertrophic pyloric stenosis, proved at operation. Surgical treatment is needed for permanent relief of symptoms. Gastroenterostomy was favored by the earlier surgeons but, more recently, some type of plastic operation on the pylorus has been used and is now the method of choice.

**Roentgen Therapy of Rheumatic Heart Disease.**—Levy and Golden gave thirty-two patients with rheumatic heart disease of varying degrees of severity 281 roentgen irradiations over the cardiac area in six years. They observed improvement in seventeen instances, in some cases more marked than they anticipated. They considered roentgen therapy of doubtful value in six cases, and two cases did not improve. Seven patients died: two of subacute bacterial endocarditis, and five of cardiac insufficiency. Five patients with paroxysms of severe heart pain have been completely relieved. Temporary relief was afforded in two, and in one instance no beneficial effect was observed. In a number of cases, following roentgen therapy, a low grade, smoldering carditis apparently has become inactive. In such patients there have been no signs of recrudescence of active rheumatism during the period of observation, which in seven instances has been over five years. They noted changes in the form of the electrocardiogram in nineteen cases. They believe these changes due to the effects of irradiation on the myocardium, with modification of the rheumatic lesions. They observed irradiation reactions in sixteen patients. There was no evidence of injury to the heart nor was the course of the disease unfavorably influenced. Their earlier impressions concerning the value of irradiation of the heart in rheumatic carditis have been confirmed after a six year period of observation. Patients in the first attack of rheumatic fever, with slight cardiac involvement, offer the best chance for successful therapy, and in them the danger of subsequent cardiac damage may be minimized. In cases of low grade infection and predominantly cardiac involvement, activity of the lesions often appears to subside following roent-

gen treatment. Roentgen therapy may afford great relief to certain patients with rheumatic heart disease in whom paroxysmal cardiac pain is the chief form of discomfort.

**Radiotherapeutic Considerations of Follicular Lymphoblastoma.**—Rosenthal and his associates call attention to the clinical, pathologic and prognostic characteristics of follicular lymphoblastoma. This condition is associated with generalized adenopathy and usually splenomegaly. Microscopically, it may be differentiated from other forms of lymphosarcoma by the unusual giant follicle formation. In four of their cases, exclusively in women, exophthalmos occurred during the course of the disease. The prognosis with respect to longevity is more favorable than in other forms of lymphosarcoma. Follicular lymphoblastoma is markedly radiosensitive. The authors employ fractional doses of high voltage roentgen therapy (from 180 to 200 kilovolts). The average dose is about 200 roentgens. All the involved areas are treated at three or four day intervals. As a rule, a test treatment of about 125 roentgens is employed at first. They adopted this procedure after learning of an accident that occurred in the treatment of a case of exophthalmos due to follicular lymphoblastoma. This patient received a massive dose to the eye through three fields at one sitting. The same day there was a severe reaction about the eye with marked proptosis necessitating enucleation of the eyeball. All their patients with exophthalmos who received the fractional dosage were treated successfully. Only one required a second series of treatments to the eye. In one patient exophthalmos of the right eye occurred several years after the left; both responded promptly to irradiation. The lesions throughout the body responded readily until the terminal stage of the disease, when they became radioresistant. In several instances, radium packs induced regression when roentgen therapy failed.

## Annals of Internal Medicine, Ann Arbor, Mich.

6: 717-854 (Dec.) 1932

Manner of Onset in Acute Rheumatic Fever as Seen in New York City. H. Brooks and C. O'Regan, New York.—p. 717.
Observations on Obesity. R. M. Wilder, Rochester, Minn., and Florence H. Smith and Irene Sandiford, Chicago.—p. 724.
Insulin in Malnutrition: Further Observations. R. D. Metz, Detroit. —p. 743.
*Carotenemia Associated with Ingestion of Pumpkin: Report of Case. A. C. Curtis and E. E. Kleinschmidt, Ann Arbor, Mich.—p. 751.
*Comparison of Blood Pressure in Men and Women: Statistical Study of Five Thousand Five Hundred and Forty Individuals. M. Wetherby, Minneapolis.—p. 754.
Action of Benzol, Roentgen Rays and Radium on Blood and Blood Forming Organs. E. E. Osgood, Portland, Ore.—p. 771.
Further Study of White Family Showing Elliptical Erythrocytes. W. C. Hunter, Portland, Ore.—p. 775.
*Potassium Sulphocyanate: Note on Its Use for Painful Crises in Sickle Cell Anemia. E. G. Torrance and T. G. Schnabel, Philadelphia.—p. 782.
Assay of Goldenrod as Cause of Hay Fever. W. T. Vaughan and Ruth W. Crockett, Richmond, Va.—p. 789.
*Present Status of Ketogenic Diet. D. S. Pulford, Sacramento, Calif.—p. 795.
Treatment of Cavities in Pulmonary Tuberculosis. L. S. Peters, Albuquerque, N. M.—p. 802.
Chronic Invalidism with Marked Personality Changes Due to Myxedema. H. F. Stoll, Hartford, Conn.—p. 806.
Historic Montreal: Metropolis of Canada and Mother of Cities of the West. Maude E. Abbott, Montreal, Canada.—p. 815.

**Carotenemia.**—Curtis and Kleinschmidt report a case of carotenemia associated with the ingestion of pumpkin. The pigmented areas were the palms of the hands, soles of the feet, forehead, nasolabial folds, lips, soft palate, inferior surface of the tongue, conjunctivae, abdomen and lumbar regions. The case is illustrative of the extent to which carotenemia can develop from ingestion of a food rich in carotene content over a period of seven months. The blood carotene content at the height of the carotenemia was 1.65 mg. per hundred cubic centimeters of serum, and one month later with a carotene low diet it was 0.075 mg.

**Comparison of Blood Pressure in Men and Women.**—Wetherby studied the routine blood pressure reading of the 5,540 persons admitted to the medical division of the outpatient department of the University of Minnesota Hospital, from December 1926 to December 1929. His statistical analysis showed an increase in the mean value of systolic and diastolic blood pressure with age, the most marked rise occurring a decade earlier for women than for men. The relative variation increases over the age period but has a tendency to rise abruptly and remain relatively constant between rises. These rises also occur one decade earlier for women than for men. The absolute variation is greater for women than for men. There is a statistical significant difference in mean value for men and women after 30 to 40 years of age. A statistically significant difference is also shown in the incidence of blood pressure of higher groups for women in comparison with men. The averages for men and women in the higher groups do not show a significant difference. The clinical significance of blood pressure of equal degree must be considered independently in men and women. A given elevated blood pressure is more apt to be benign in nature and, if of pathologic consequence, to run a longer course in women than in men. Hypertension as a cause of death is as frequent in men as in women, even though the incidence of blood pressure at higher levels is significantly greater in women. In the older age groups this difference is partially explained by the shorter course of the condition in men.

**Potassium Thiocyanate in Sickle Cell Anemia.**—Torrance and Schnabel record their experiences with a Negro male patient, aged 26, who on five successive admissions to the hospital always complained of severe pains in the extremities, back and chest. In their effort to control the patient's abdominal crises they resorted to many drugs and therapeutic endeavors. Ludlum's examination of wet specimens of the patient's blood with dark field illumination showed an unusual degree of erythrocytic clumping. He suggested the trial use of sodium and potassium salts together with potassium or sodium thiocyanate, largely on theoretical grounds. The patient was given large daily doses of potassium citrate and sodium bicarbonate, to which was added 1¼ grains (0.08 Gm.) of potassium thiocyanate three times a day. Four days later this dosage was increased to 2½ grains (0.16 Gm.) three times a day and continued for eleven days. During this time he was entirely free from pain and discomfort and was up and about the ward. He remained free from pain for five days, when he again complained of pain in the shoulders and abdomen. Immediately on receiving the potassium thiocyanate therapy he again experienced a prompt relief of symptoms. During the period of thiocyanate medication, no variations in the number of sickle cells were noted.

**Present Status of Ketogenic Diet.**—Pulford states that in the ketogenic diet ketosis acts differently physiologically from acidosis caused by a shift in acid-base equilibrium and has other effects than dehydration. The ketogenic diet is still necessary, therefore, in the treatment of epilepsy. In the light of the studies of the last decade, one must consider all epilepsy as symptomatic of organic changes in the central nervous system, and not "idiopathic." Until the "precipitating cause," thought to be some physiochemical state, is discovered, its cure is not possible. The arrest of convulsions is obtained, however, in the majority of cases under controlled conditions of ketosis, sodium chloride-calcium ion balance and water balance. The results reported from the use of the ketogenic diet alone without special attention to the water or mineral metabolism are surprisingly uniform. In about one third of the intelligent, cooperative patients epilepsy can be arrested, another one third are benefited so that they wish to continue with the diet, but one third are not helped. Those who are benefited have only slight lesions. The ketogenic diet stops petit mal definitely in many early cases, dehydration not benefiting these patients. Petit mal is therefore the one phase of epilepsy that may be cured. The modern method of treating epilepsy with a combination of ketogenic diet, dehydration and a shift in the sodium calcium ions arrests convulsions in the majority of cases. A "cure," however, is no nearer now than in 1921, when the ketogenic diet was first introduced. The chief causes for failure are brain tumor, mental deterioration due to chronicity and old age, psychopathic states, and lack of cooperation. The dangers inherent in the ketogenic diet, such as nitrogen, calcium and vitamin deficiency, are controverted by the intake of yeast, viosterol and calcium in sufficient quantities to prevent pellagra, amenorrhea, and negative nitrogen and calcium balance. Fluid restriction permits a mild ketosis without a high degree of cholesteremia formerly found with a severer ketogenic diet. The ketogenic diet has been found a useful adjunct in the treatment of migraine headache,

asthma and urinary infections, and, in the persons who are receiving it, it acts as a prophylactic against the common acute infections of the respiratory tract, such as colds and influenza, as well as against the acute infectious diseases of childhood.

## Annals of Otol., Rhinol. and Laryngology, St. Louis

**41:** 983-1294 (Dec.) 1932

Papillary Carcinoma of Maxillary Sinus: Report of Case. J. H. Bryan, Washington, D. C.—p. 983.
Histopathology of Larynx Antedating Clinical Evidence of Laryngeal Tuberculosis. F. R. Spencer, Boulder, Colo., and F. Summerill, Philadelphia.—p. 990.
Laryngectomy, Single Stage: Operative Results. H. B. Orton, Newark, N. J.—p. 1018.
*Atypical Facial Neuralgia, a Syndrome of Vascular Pain. T. Fay, Philadelphia.—p. 1030.
*Anatomic Study of Extension of Mastoid Infection into Digastric Muscle and Adjacent Structures. E. F. Ziegelman, San Francisco. —p. 1063.
Recurrent Hoarseness and Aphonia Without Demonstrable Laryngeal Pathology. L. W. Oaks, H. G. Merrill and L. E. Oaks, Provo, Utah.—p. 1079.
Observations on Temporal Bone. G. E. Tremble, Montreal, Canada.—p. 1087.
Clinical Versus Roentgen-Ray Diagnosis of Sinusitis. S. R. Skillern, Jr., Philadelphia.—p. 1096.
Implants in Nasal Deformities: History and Uses. H. L. Pollock, Chicago.—p. 1103.
Noise in Industry: Its Effect on Hearing and on General Health: Review of Literature. H. F. Smyth, Philadelphia.—p. 1108.
Five Preliminary Notes on Nasal Function. A. W. Proetz, St. Louis. —p. 1117.
Red Nasal Septum Syndrome. D. C. Jarvis, Barre, Vt.—p. 1124.
*Relationship of Nasal Sinus Infection to Sydenham's Chorea. R. F. Davis, Portland, Ore.—p. 1130.
Etiology and Treatment of Orbital Infection. C. T. Porter, Boston. —p. 1136.
Ear Manifestations in Diabetes. V. K. Hart, Charlotte, N. C.—p. 1142.
Safety Pin Closer and Staple Point Projector. G. G. Carroll, Rochester, N. Y.—p. 1145.
Cause of Otosclerosis. L. K. Guggenheim, St. Louis.—p. 1149.
*Neoplasms of Nose, Throat and Ear: Carcinoma of Esophagus. J. C. Beck and M. R. Guttman, Chicago.—p. 1183.

**Atypical Facial Neuralgia.**—Fay points out that chronic attacks of deep, dull, aching pain in the eye, malar region, about the ear and down the neck, worse at night and throbbing in character have been found associated with tenderness to deep pressure over the arterial branches of the neck and head. It has been demonstrated during the acute stage of pansinusitis that pressure over this structure produces pain referred to the eye and into the region of the zygoma, similar to that complained of by the patient. This has served, in doubtful cases, as a means of differential diagnosis between trigeminal and atypical neuralgia. Certain thoracic and visceral disturbances may find a peripheral reference of pain reflexly, through the vagus arc, as this structure supplies sensory fibers by way of the arterial branches to the deep structures of the face, neck, thorax and abdomen. The author concludes that, following the various combinations of sensory, sympathetic, vagal and vascular sheath resections, an analysis of the results (assisted by a process of negative elimination) indicates the existence of three distinct pain mechanisms to the structures of the head, face and neck: (1) superficial pain by way of the trigeminal and cervical branches; (2) deep pain sense transmitted through the sensory branches and connections of the vagus nerve; (3) tenderness and deep pain along the arterial tree through the carotid sheath to the cervical thoracic cord.

**Anatomic Study of Extension of Mastoid Infection.**—According to Ziegelman, extension of a mastoid infection from the tip cells into the digastric muscle and adjacent structures does occur. It is relatively uncommon, probably because of the excellent type of mastoid surgery that is usually performed at the present time. It must be differentiated from furunculosis, parotitis and parotid abscess. Simple inflammatory extension into the digastric muscle from mastoid infection probably does occur, causing a functional disturbance of this muscle and allied structures. The treatment is surgical by way of the submaxillary approach. The author's method is similar to that described by Mosher. He makes a T-shaped incision along the inferior border of the maxillary bone; the long arm of the T he directs downward along the anterior border of the sternomastoid muscle, exposing the digastric muscle, cautiously avoiding the hypoglossal nerve and locating the pus by sharp dissection if possible, otherwise using Hilton's method.

**Nasal Sinus Infection and Sydenham's Chorea.**—Davis presents four illustrative cases of chorea associated with sinus infection. The literature of fifty years ago suggests conditions in the nasopharynx as a cause of the disease, but only in the last few years has the relationship of nasal sinus conditions been recognized. The number of chorea patients with sinus infection in Doernbacher Hospital has been 25 per cent of the total number of chorea patients. It is probable that this percentage may be found to be higher as a more careful search for sinus involvement is made. All writers have emphasized that rapid improvement, and often cure, follow prompt and active treatment of the sinus condition. Many urge a rapid elimination of the focus to save the heart. The future may demonstrate that nasal sinus infections have more to do with this disease than is now supposed.

**Carcinoma of Esophagus.**—Beck and Guttman believe that cervical or retrosternal discomfort in swallowing should be an absolute indication for esophagoscopy, especially if the patient is within the so-called cancer age. In the diagnosis of carcinoma of the esophagus, esophagoscopy is preferred to and must be preceded by roentgenology, and a biopsy performed when pathologic changes are encountered. More may be expected from surgery in carcinoma of the esophagus if the lesion is diagnosed early and is located in the cervical portion. Irradiation, whether by the so-called radium bomb, high voltage roentgen therapy, radon seeds or the actual radium element, is mainly palliative and aids in maintaining a patent esophageal lumen. Intubation is an important palliative measure that makes the patient's existence easier by preventing starvation and thirst and thus obviating gastrostomy. Dilation is utilized only as a preliminary step to intubation. Gastrostomy is a measure of last resort and utilized only when irradiation and intubation fail to maintain a patent lumen.

## Archives of Dermatology and Syphilology, Chicago

**27:** 1-184 (Jan.) 1933

*Mercurial Inunctions in Treatment of Syphilis: Excretion of Mercury Following Use of Mild Mercurous Chloride Inunctions; Mode of Absorption of Mercury from Skin. H. N. Cole, H. F. DeWolf, Nora E. Schreiber, T. Sollmann and J. Van Cleve, Cleveland.—p. 1.
Epidermomycosis at University of California: Study III. R. T. Legge and L. Bonar, Berkeley, Calif., and H. J. Templeton, Oakland, Calif. —p. 12.
*Eczema Due to Hypersensitiveness to Rubber: Scientific Study. M. E. Obermayer, Chicago.—p. 25.
*Gold Dermatitis Limited to Depigmented Skin, with Theoretical Consideration of Its Etiology. D. M. Pillsbury and G. V. Kulchar, Philadelphia.—p. 36.
LXII. Meningitis and Dermatitis Caused by New Variety of Blastomycete (Endomycete). C. M. MacBryde and E. I. Thompson, St. Louis. —p. 49.
Psoriasis and Multiple Superficial Epithelioma. C. S. Wright and R. J. Friedman, Lansdowne, Pa.—p. 70.
Keratoderma Diseminatum Palmaris et Plantaris: Its Mode of Inheritance. J. C. Michael, Houston, Texas.—p. 78.
*Roentgen Rays in Treatment of Acne: Evidence That They Do Not Produce Scarring. H. D. Niles, New York.—p. 89.
Experimental Monosporosis. J. A. Gammel and A. R. Moritz, Cleveland. —p. 100.
*Chromoblastomycosis in Texas. S. J. Wilson and S. Hulsey, Fort Worth, Texas, and F. D. Weidman, Philadelphia.—p. 107.

**Mercurial Inunctions in Treatment of Syphilis.**—Cole and his associates administered to six adult male patients a series of from eighteen to thirty rubs, with a median of thirty rubs. There was one salivation at fourteen days, probably an idiosyncrasy. At the end of four weeks there was a median mercury excretion of but 0.09 mg. and a median fecal excretion of 0.37 mg. The relatively high fecal excretion is probably to be explained as absorption from the fingers by way of the mouth. This low mercury excretion after 50 per cent mild mercurous chloride inunctions may be best compared to that which occurs with 5 per cent metallic mercury inunctions, with which there was a median urinary excretion of 0.15 mg. at the end of four weeks and a median fecal excretion of 0.25 mg. at the end of four weeks. The explanation for the low urinary mercury excretion after 50 per cent mild mercurous chloride inunctions probably lies in the difficulty of rubbing the hard particles of mild mercurous chloride into the hair follicles. Consequently, it is poorly absorbed.

**Hypersensitiveness to Rubber.**—Obermayer presents the chemistry of the manufacture of rubber and enumerates the substances employed which may give rise to a dermatitis. Studies made on a patient revealed that the hypersensitiveness

was not due to crude rubber, to chemical substances employed in manufacturing rubber goods or to rubber goods themselves. It was therefore assumed that the hypersensitiveness was due to the process of cold-cure vulcanization used in manufacturing. While glove rubber cured with sulphur monochloride gave a positive result, such material cured with substances not containing sulphur monochloride gave a negative result. The chemistry of sulphur monochloride was studied; the probable offending compound was postulated. The similarity of the compound to mustard gas led to the idea of rendering it nonirritant by treatment with alkali. After the chemical experiment had verified the theory, treatment of rubber gloves with a 4 per cent solution of sodium hydroxide was tried. The result was gratifying, and the patient is now able to work with gloves treated with alkali without having dermatitis.

**Gold Dermatitis Limited to Depigmented Skin.**—Pillsbury and Kulchar review the literature and describe two cases of vitiligo in which a dry papulosquamous dermatitis limited to the depigmented skin occurred following the intravenous use of gold sodium thiosulphate. In one case the presence of gold was demonstrated in the skin from the involved area by the method of Christeller. Microscopic sections showed severe inflammatory changes and numerous minute hemorrhages limited strictly to the papillae and the subpapillary parts. Patch tests with gold sodium thiosulphate were negative, while the intradermal tests were slightly more marked in the depigmented skin. The authors concluded that the photosensitivity of the depigmented patches was not the controlling factor in the development of the gold dermatitis in their cases. A review of the literature emphasizes the multiform character of reactions to gold compounds, the greater frequency of reactions depending on the cumulative effect rather than true anaphylaxis and the marked tendency of gold dermatitis to leave pigmentary remains that may be confined to the exposed surfaces. They observed that available information on the histology of gold dermatitis is not extensive, and they were unable to correlate the reported observations closely with those observed in one of their cases. There seems, however, to be a tendency to limitation of the pathologic changes to the region of the papillae in many cases.

**Roentgen Rays in Treatment of Acne.**—Niles administered to forty patients an average of twelve and one-half weekly exposures of one-fourth skin unit of roentgen rays on one side of the face and a placebo treatment on the other: the scars were equal on the two sides in thirty-two cases, more pronounced on the untreated side in five, and greater on the treated side in three. The amount of scarring after acne vulgaris depends on the severity and duration of the eruption and the tendency of the patient's skin toward scar formation. This seems to be neither increased nor decreased by roentgen therapy. In nineteen of the forty patients, the untreated side was either entirely cured or almost well and as much improved as the treated side. This may be partly explained by the fact that fewer rays reached the mesial part of the untreated side of the face, owing to the lack of overlapping irradiation from the treated side.

**Chromoblastomycosis.**—Wilson and his associates observed that an extensive verrucous disease of one leg, of forty years' duration, in a patient from Texas, was referable to a fungus, Phialophora verrucosa. The authors' case is the second authentic case reported in the literature. The disease closely resembles tuberculosis verrucosa cutis and Gilchrist's blastomycosis. Histologically, it also resembles Gilchrist's blastomycetic dermatitis, except that the micro-organisms do not bud and are deep brown. Phialophora verrucosa was isolated in culture. Injection into white rats invariably induced granulomas, and injection into the testis caseation. The organism was of extremely low virulence; it appeared to be incapable of existing in the viscera or other deep tissues. Experimentally induced lesions remained localized at the sites of lodgment. The histology of the Brazilian, Bostonian and Texan lesions was compared in the original materials sent from those places. In tissue the micro-organisms appeared to be identical. In view of the recovery of Alternaria from one of the experimental rats, it is theoretically possible that the organisms from all three places are genetically the same, although not identical in culture.

## Archives of Ophthalmology, Chicago

**9**: 1-164 (Jan.) 1933

Pathologic Changes in Orbit in Progressive Exophthalmos, with Especial Reference to Alterations in Extra-Ocular Muscles and Optic Disks. H. C. Naffziger, San Francisco.—p. 1.
Syndrome in Uveal Tuberculosis. W. C. Finnoff, Denver.—p. 13.
*Production of Pigment in Conjunctiva in Night Blindness, Prexerosis, Xerosis and Keratomalacia of Adults. A. Pillat, Peiping, China.—p. 25.
Early Grafting in Burns of the Eye. G. B. O'Connor, San Francisco.—p. 48.
Diagnostic Value of Tests of Light Sense in Early Glaucoma. V. Casten and Dorothy J. Shaad, Boston.—p. 52.
Morgagnian Cataracts and Their Complications: Report of Case of Spontaneous Rupture of Lens Capsule Causing Secondary Glaucoma. S. I. Kaufman, Chicago.—p. 56.
Detachment of Retina: Guist Operation and Report of Cases. H. S. McKeown, New York.—p. 64.
Dystrophia Adiposa Corneae. D. Katz and P. A. Delaney, Chicago.—p. 78.

**Production of Pigment in Conjunctiva.**—Pillat states that in China a characteristic pigmentation of the conjunctiva appears in night blindness, prexerosis corneae, xerosis epithelialis and keratomalacia of adults in the various stages of vitamin A deficiency. The intensity of pigmentation varies greatly in different cases and at the different zones of the conjunctiva. It is most marked in the lower fornix, first in the circular fold, then in the plica, the conjunctiva of the lower half of the bulbus, the lower lid, the upper half of the bulbus and, finally, the upper fornix and upper lid. On histologic examination, the conjunctival fissure shows a varying amount of pigment, usually corresponding to the stage of vitamin A deficiency. The entire pigment is produced in the epithelium of the conjunctiva by the conjunctival cells. There are two types of pigment-producing cells, the dendritic cells or melanoblasts. The dendritic cells appear first in vitamin A deficiency, and later the pigment caps in the other epithelial cells are formed. In advanced cases of long duration, almost every epithelial cell contains a considerable amount of pigment. The conjunctival hyperpigmentation, which is formed because of vitamin A deficiency, disappears gradually along with the healing of the other clinical symptoms by the administration of cod liver oil, but the pigmentation is the last symptom to disappear. The long duration of pigmentation in the conjunctiva after the acute condition is over makes it possible sometimes to determine the etiology of a leukoma adherens or of a staphyloma corneae as a sequela following vitamin A deficiency.

## California and Western Medicine, San Francisco

**38**: 1-72 (Jan.) 1933

*Friedman Test for Pregnancy. L. G. McNeile and P. A. Reynolds, Los Angeles.—p. 1.
Wassermann-Fast Syphilis. M. W. Hollingsworth, Santa Ana.—p. 8.
Peptic Ulcer: Its Clinical Aspects: Report of Cases. F. A. Speik, Los Angeles.—p. 12.
Life Insurance Examinations. T. G. Dabney, San Francisco.—p. 16.
Gallbladder and Duct Diseases. H. Shoemaker, Los Angeles.—p. 22.
Eczema: Present Day Concepts. E. D. Chipman, San Francisco.—p. 27.
*Bismuth Therapy in Syphilis: Dermatologic and Medical Aspects. H. E. Alderson, San Francisco, and S. Ayres, Jr., Los Angeles.—p. 30.
Some California School Economics. A. F. Gillihan, San Luis Obispo.—p. 34.

**Friedman Test for Pregnancy.**—McNeile and Reynolds state that the Friedman test has an accuracy of about 98 per cent, which parallels that of the Aschheim-Zondek test, and that it determines the presence of live placental tissue or tissue of placental origin in contact with the maternal circulation. It may therefore give false negatives in the presence of missed abortions, incomplete abortions, or ectopic pregnancies with dead fetal tissue. The reaction might be positive in the case of a macerated fetus, as the placenta in these cases frequently contains live tissue. The test is strongly positive in the presence of hydatid mole and chorio-epithelioma, and quantitative Aschheim-Zondek tests become an important aid in the diagnosis, treatment and prognosis of these conditions. Attention has recently been called to the fact that primary ovarian failure or castration of the human being may cause a compensatory anterior lobe hypertrophy which may throw an excess of anterior lobe hormone into the circulation, thus accounting for a certain number of false positive reactions. The technic that the authors suggest is the use of a fresh specimen of urine, with two injections of 7 cc. each on successive days, using a carefully controlled rabbit not under 12 weeks of age and killing the animal at forty-eight hours. If greater speed is needed,

two rabbits should be injected, as suggested by Schneider, one killed early, and, if negative, the second at forty-eight hours. A catheterized specimen of urine procured by a responsible person is desirable.

**Bismuth Therapy in Syphilis.**—According to Alderson and Ayres, during the past ten years bismuth has been used widely and in some clinics exclusively in the treatment of syphilis. Reports from many quarters and based on observations in many thousands of cases confirm the value of bismuth in its rapid spirocheticidal effects, its ability to heal syphilitic lesions in all stages of the disease, its prompt effect on the serologic reactions and its relatively low toxicity. Three main types of bismuth are available: the insoluble suspensions, the oil soluble and the water soluble. All three types have their special fields of usefulness. Those who base their choice on the insoluble preparations advance the theory that, because of the slow absorption, depots of bismuth are formed at the site of injection from which a gradual but prolonged absorption of the metal into the system takes place, and that by reason of this slow absorption a better therapeutic effect is obtained. Those who favor the water soluble preparations advocate giving the injections more frequently and claim that by reason of the rapid absorption a greater spirocheticidal effect is to be anticipated. Between these extremes stand those who regard the liposoluble preparations as combining the advantages of the other two types. Bismuth should always be injected intramuscularly, never intravenously. It should be given in courses of from ten to twenty injections once or twice a week, depending on the type of bismuth used.

## Canadian Public Health Journal, Toronto

**23:** 553-596 (Dec.) 1932

Venereal Disease Situation in Canada: Information and Recommendations Regarding Control of Venereal Disease in Canada Arising out of Regional Conferences of Clinicians Working in Special Clinics. F. S. Parney, Ottawa, Ont.—p. 553.
Maternal Mortality. H. B. van Wyck, Toronto.—p. 562.
Use of Hydrocyanic Acid for Fumigation Purposes. C. L. Williams, Rosebank, Staten Island, N. Y.—p. 567.

## Journal of Biological Chemistry, Baltimore

**99:** 1-322 (Dec.) 1932. Partial Index

Is There an Unknown Compound of Nature of Calcium Citrate Present in Blood? D. M. Greenberg and L. D. Greenberg, Berkeley, Calif.—p. 1.
Modification of Stoddard and Drury Titrimetric Method for Determination of Fatty Acids in Blood Serum. Evelyn B. Man and E. F. Gildea, New Haven, Conn.—p. 43.
Antirickettic Potency of Eggs from Hens Receiving Massive Doses of Activated Ergosterol. F. G. McDonald and O. N. Massengale, Evansville, Ind.—p. 79.
Changes in Phosphoric Ester Content of Red Blood Cells and Liver in Experimental Rickets. H. D. Kay, Toronto, Canada.—p. 85.
The o-Benzoquinone Test for Cysteine. W. C. Hess and M. X. Sullivan, Washington, D. C.—p. 95.
Effect of Anticoagulants on Determinations of Inorganic Phosphate and Protein in Plasma. O. H. Gaebler, Detroit.—p. 99.
Relationship Between Muscle Creatine and Creatinine Coefficient. A. Chanutin and F. W. Kinard, University, Va.—p. 125.
Chemical Studies on Parathyroid Hormone. W. R. Tweedy and M. Torigoe, Chicago.—p. 155.
Studies on Vitamin G ($B_2$), with Especial Reference to Protein Intake. H. C. Sherman and I. A. Derbigny, New York.—p. 165.
Two New Color Tests for Hexoses. J. H. Fouger, Cincinnati.—p. 207.
Method for Determination of Monosaccharides in Presence of Disaccharides and Its Application to Blood Analysis. H. Tauber and I. S. Kleiner, New York.—p. 249.
Iron and Copper in Liver and Liver Extracts. A. E. Meyer and C. Eggert, Rockford, Ill.—p. 265.

**99:** 323-662 (Jan.) 1933. Partial Index

*Elimination of Bromides from Blood Stream. J. W. Palmer and H. T. Clarke, New York.—p. 435.
*Use of Metal Cages in Study of Nutritional Anemia. Gladys B. Geraghty, F. Aline Underhill, J. M. Orten and R. C. Lewis, Denver.—p. 451.
*Cobalt in Animal Nutrition. F. J. Stare and C. A. Elvehjem, Madison, Wis.—p. 473.
*Studies on Animal Diastases: IV. Effect of Insulin on Diastatic Activity of Blood in Diabetes. E. Reid and V. C. Myers, Cleveland.—p. 607.

**Elimination of Bromides from Blood Stream.**—According to Palmer and Clarke, bromide replaces chloride to an equal extent in blood cells and plasma. The kidneys excrete chloride preferentially over bromide. The ratio of the fraction of bromide in total halide in the blood to that in the urine is constant during constant chloride intake. When the chloride intake is raised, this ratio also rises. With a chloride intake of about 0.5 mm. a day per kilogram of body weight, this ratio has a value of about 0.4; with eighteen-fold chloride intake, the ratio rises to about 0.7. Bromide excretion is not affected by changes in urinary volume produced by dosage with urea.

**Metal Cages in Studies of Nutritional Anemia.**—Geraghty and her associates produced nutritional anemia by feeding whole milk to rats housed in glass cages, old galvanized iron wire cages and new galvanized iron wire cages, respectively, at essentially the same rate. Purified ferric chloride when added to an exclusive milk diet did not cause regeneration of hemoglobin in anemic rats kept either in old or in new metal cages. These results are completely in accord with the authors' repeated observations on rats in glass cages. Galvanized iron wire cages appear to be as suitable as their glass cage for nutritional anemia studies.

**Cobalt in Animal Nutrition.**—Stare and Elvehjem outline a method for the estimation of cobalt in biologic materials. It is applicable to samples containing from 0.01 to 0.5 mg. of cobalt. The results obtained when this method was applied to a few biologic substances are given. The entire body of rats fed a milk, iron, copper and manganese diet was found to contain less than 0.01 mg. of cobalt. Definite amounts of cobalt were found in all rats fed a similar diet plus cobalt, and the quantity present was proportional to the amount fed. The presence of from 0.04 to 0.05 mg. of cobalt in the entire body of a rat was sufficient to produce a decided polycythemia. No cobalt was detected in tissues taken from pigs fed a milk, iron, copper and manganese diet, but definite quantities were detected in practically all the tissues taken from pigs fed a similar diet plus cobalt.

**Effect of Insulin on Diastatic Activity of Blood.**—Reid and Myers report that the diastatic activity of the blood in normal persons varies between 13 and 19 (Myers-Killian method). In diabetic patients, receiving dietetic but not insulin treatment, the diastatic activity of the blood is almost invariably higher than normal. In these cases, also, there appears to be some correlation between the blood sugar and the blood diastase. In insulin-controlled diabetic patients the diastatic activity of the blood generally approximates the normal. It is suggested that the diastase while in the blood plays no part in carbohydrate metabolism, and that it is only when, in the presence of insulin, it is recalled into the liver cells that it exerts its enzymatic function with regard to the dextroseglycogen reaction.

## Journal of Comparative Psychology, Baltimore

**14:** 297-451 (Dec.) 1932

Relative Food Preferences of White Rat. P. T. Young, Chicago.—p. 297.
Effect of Inanition on Maze Learning in White Rat. F. L. Ruch.—p. 321.
Device for Making Records of Observations of Behavior More Precise. Ruth Wendell Washburn, New Haven, Conn.—p. 331.
Further Studies of Effect of Incidental Stimuli on Maze Learning with White Rat. J. R. Patrick and A. C. Anderson.—p. 335.
Reproductive Reactions of Sex Mosaics of Parasitic Wasp, Habrobracon Juglandis. P. W. Whiting, Pittsburgh.—p. 345.
Central Nervous Mechanism for Emotional Responses: I. Some Limitations of Previous Investigations with Suggestions for Further Experimental Work. C. W. Brown, San Francisco.—p. 365.
Study of Orientation in Rat. N. R. F. Maier, Ann Arbor, Mich.—p. 387.
The "Emotion" of Disgust in Dogs. A. H. Maslow, Madison, Wis.—p. 401.
Cannibalism in Dogs. E. S. Girden.—p. 409.
Amount of Motility of Seventy-Three New-Born Infants. O. C. Irwin, Iowa City.—p. 415.
Distribution of Amount of Motility in Young Infants Between Two Nursing Periods. O. C. Irwin, Iowa City.—p. 429.

## Journal of Nervous and Mental Disease, New York

**77:** 1-120 (Jan.) 1933

Improvement in Nervous and Mental States Under Cortin Therapy. F. A. Hartman, G. M. Beck and G. W. Thorn, Buffalo.—p. 1.
Thrombosis of Superior Cerebral Vein. D. B. Davis, Philadelphia.—p. 22.
Intravenous Pharmacodynamic Study of Autonomic Nervous System in Cryptogenic Group of Convulsive States. J. Notkin, New York.—p. 27.
Surgical Relief of Headache of Migraine. D. G. Dickerson, Seattle.—p. 42.
Scoliosis Produced by Spinal Cord Tumor: Case. S. S. Allen and E. A. Kahn, Ann Arbor, Mich.—p. 53.

## Journal of Nutrition, Springfield, Ill.

**6:** 1-112 (Jan.) 1933

Continual Cornified Vaginal Cells as Index of Avitaminosis-A in Rats. S. B. D. Aberle, New Haven, Conn.—p. 1.
Standards for Predicting Basal Metabolism: I. Prediction for Girls from Seventeen to Twenty-One. Marian E. Stark, Madison, Wis.—p. 11.
Parallel Determination of Respiratory Quotient and Alveolar Air of Man in Postabsorptive Condition. T. M. Carpenter and R. C. Lee, Boston.—p. 37.
Effect of Glucose and Fructose on Human Respiratory Quotient and Alveolar Air. T. M. Carpenter and R. C. Lee, Boston.—p. 55.
Comparison of Apricots and Their Carotene Equivalent as Sources of Vitamin A. Agnes Fay Morgan and Evelyn O. Madsen, Berkeley, Calif.—p. 83.
Copper, Iron and Manganese Content of Fish. T. B. Parks and E. R. Rose, Burlington, Vt.—p. 95.
Vitamin A Content of Yellow-Tissued and White-Tissued Apples. Myra T. Potter, Pullman, Wash.—p. 99.

## Journal of Urology, Baltimore

**29:** 1-120 (Jan.) 1933

Urea Clearance Test in Urology. V. J. Harding and R. W. T. Urquhart, Toronto, Canada.—p. 1.
Some Experimental Work on Site for Ureteral Transplant. J. K. Ormond, Detroit.—p. 15.
Acute Ureteral Obstruction. N. F. Ockerblad, Kansas City, Mo.—p. 29.
Ureteral Granuloma. H. G. Hamer, H. O. Mertz and W. N. Wishard, Jr., Indianapolis.—p. 43.
*Combined Psychiatric and Urologic Study of Sexual Impotence. L. B. Hohman, Baltimore, and W. W. Scott, Rochester, N. Y.—p. 59.
*Urologic Aspects of Sexual Impotence. A. L. Wolbarst, New York.—p. 77.
Sperm Storage Function of Seminal Vesicles. H. W. Beams and R. L. King, Iowa City.—p. 95.
Ureterovesical Cyst. E. L. Young, Jr., Boston.—p. 99.
Hernia into Female Bladder. F. J. Cushman, Lansing, Mich.—p. 107.
*Acquired Renocolic Fistula: Report of Case. R. W. Barnes, Los Angeles.—p. 111.
Presentation of Cystoscopic, Irrigating, Fulgurating Attachment for Author's Cautery Punch. J. R. Caulk, St. Louis.—p. 117.

**Psychiatric and Urologic Study of Sexual Impotence.**—Hohman and Scott summarize the outcome of their study by saying that there are four types of causes which lead to interference with normal sex function: (1) the organic urologic disease, (2) physiologic inferiority, (3) purely psychologic disturbances and (4) a combination of organic urologic disease and psychologic disturbances. They present cases illustrating the interrelation of these types of causes, and they are convinced that for men in the prime of life the psychologic (and often physiologic) causes are the most important ones. While they attempt to specify what constitutes adequate organic etiology, they stress the fact that this type of etiology is more frequently the starting point rather than the cause for the continuation of impotence. Their study extending over a period of years has convinced them that it is only by this combined method of approach to the problem that one can offer patients the type of treatment to which they are entitled. One cannot emphasize too strongly the need for careful and informed consideration and study, if one wishes to save the sex lives of these patients from dangerous if not irreparable damage.

**Urologic Aspects of Sexual Impotence.**—In a study of 300 cases of male impotence, Wolbarst observed that 44 per cent gave a history of previous gonococcic infection usually involving the adnexa; 27 per cent practiced "withdrawal" for from three to twelve years; 14 per cent admitted excessively frequent intercourse in their early years; 5 per cent admitted frequent and long continued masturbation for periods varying from four to fifteen years; 5 per cent admitted a history of ungratified sexual desire for from five to seventeen years; 3 per cent gave unmistakable evidence of endocrine dysfunction, and 2 per cent presented evidences of psychic disturbance. Gonorrhea and abnormal sex life constitute the most frequent causes of impotence. Urethroscopically, pathologic changes were observed in 89 per cent of the patients with a gonorrheal history and in 77 per cent of the nongonorrheal patients with a history of abnormal sex living. Seminal vesiculitis was the invariable common factor observed in all cases, regardless of previous history. A pathologic condition in the posterior urethra is not the cause of the impotence but reflects the primary pathologic condition existing in the vesicles. Treatment must be accorded to all possible etiologic factors, but especially to the vesiculitis and the urethral changes. In the vast majority of cases, vasotomy is probably the most effective single therapeutic measure for the vesiculitis and the impotence. Prognosis is generally good if all etiologic factors are accorded appropriate treatment. Appreciable improvement to complete cure was attained in 77 per cent of the author's series.

**Acquired Renocolic Fistula.**—Barnes states that a search of the literature did not reveal a case of renocolic fistula. He reports a case which resulted from a neglected calculous pyonephrosis rupturing into the ascending colon. Diagnosis was made by the pyelogram showing the escape of the pyelographic fluid into the cecum. Nephrectomy and closure of the opening into the cecum was successfully accomplished. The author's case emphasizes the importance of earlier urologic study in cases with continued pyuria. It also adds another interesting condition to the list of sequelae of neglected pyonephrosis.

## Kansas Medical Society Journal, Topeka

**34:** 1-42 (Jan.) 1933

Goiter. C. S. Newman, Pittsburg.—p. 1.
Allergy and Its Relationship to Rhinologist. C. T. Moran, Arkansas City.—p. 6.
Reducing Substances in Urine. K. L. Druet, Salina.—p. 9.
Message from President of the American Medical Association. E. H. Cary, Dallas, Texas.—p. 14.
Mental Cancer. R. W. Robb, Osawatomie.—p. 18.

## Military Surgeon, Washington, D. C.

**72:** 1-92 (Jan.) 1933

Training of Medical Units in Gas Warfare. G. L. McKinney.—p. 1.
Trichophytosis. W. L. Wilson.—p. 11.
Inguinal Hernia. H. P. Makel.—p. 20.
Malaria and Military Medicine During Conquest of Algeria. By Commander Medical Corps Hamet, translated by W. H. Michael.—p. 24.
Detmold Method of Controlling Inoperable Hemorrhage. J. F. Baldwin.—p. 34.
*Undulant Fever Treated with Mercurochrome: Case Report. M. L. Todd.—p. 37.
Military Service and Its Relation to Tuberculosis Control. J. S. Fernando.—p. 40.
Standardize Our Operating Pavilions. H. W. Jones.—p. 44.

**Undulant Fever Treated with Mercurochrome.**—Todd reports in detail a case of an undiagnosed fever of low grade with loss of weight, intense headache, lumbar pain, fugitive pains in the arms, injected conjunctivae, increased knee jerks and an increase in the small mononuclear cells. The patient made no improvement under rest cure and forced feeding but responded at once to an injection of 10 cc. of a 1 per cent solution of mercurochrome. The change was so marked that there was no doubt in his mind as to what caused it. The author has previously reported two cases of undoubted Malta fever in which the response to mercurochrome was equally sudden.

## New England Journal of Medicine, Boston

**208:** 1-56 (Jan. 5) 1933

*Management of Acute Inversion of Puerperal Uterus, with Especial Reference to Early Diagnosis, Manual Reposition and Report of Ten Cases. E. d'Errico, Boston.—p. 1.
Radiation in Operable Cancer. D. Quick, New York.—p. 8.
Responsibility of Medical Men in Control of Cancer. B. T. Simpson, Buffalo.—p. 11.
Health Education in the City of Boston. Ruth I. Parsons, Malden, Mass., and C. E. Turner, Cambridge, Mass.—p. 19.
Nail Changes in Pulmonary Tuberculosis. S. S. Hanflig, Boston.—p. 27.
Caudal Anesthesia in Urology. R. A. Harpin, Boston.—p. 31.
Minority Reports of Committee on the Costs of Medical Care. N. B. van Etten, New York.—p. 33.
Scientific Method in Motor Vehicle Administration. C. S. Slocombe, London, England.—p. 35.

**208:** 57-112 (Jan. 12) 1933

Treatment of Cancer of Prostate. G. G. Smith, Boston.—p. 57.
Pharmacology of Digitalis in Relation to Therapy of Heart Disease. H. A. Christian, Boston.—p. 66.
Relationships Between Emotional States and Organic Disease. M. Fremont-Smith, Boston.—p. 69.
Considerations on Protein and Salt Therapy in Various Types of Bright's Disease. A. M. Butler, Boston.—p. 71.
Pneumothorax Treatment in Tuberculosis. E. J. Rogers, Pittsford, Vt.—p. 78.
Health Education in the City of Boston: III. Health Education in Boston Public Schools. Ruth I. Parsons, Malden, Mass., and C. E. Turner, Cambridge, Mass.—p. 81.

**Acute Inversion of Puerperal Uterus.**—According to d'Errico, acute inversion of the puerperal uterus is more common than one is led to believe. This accident may happen in well supervised clinics and in competent hands. Hemorrhage, pain and surgical shock are the principal symptoms and

examination will disclose the uterus in the vagina, the fundus being replaced by an indentation, a cupping or a crater. An effort should be made to emphasize the importance of this complication in medical schools and to the medical profession at large, in regard both to its early recognition and to the technic of manual replacement. Manual replacement will usually be successful if the condition is recognized early. Abdominal replacement following Huntington's technic should be the method of choice in cases in which efforts at manual reposition should not be attempted, but the abdominal route should be chosen. In the chronic type of inversion the better approach is by the vaginal route following Spinelli's operation for the clean cases, whereas vaginal hysterectomy should be the choice in the presence of sepsis.

## New Orleans Medical and Surgical Journal

**85:** 481-570 (Jan.) 1933

Radium and the Menopause. L. J. Williams, Baton Rouge, La.—p. 481.
Adequate Health and Medical Service to All the People All the Time, Basic Factor in Community Health, Wealth and Happiness. P. M. Payne, Napoleonville, La.—p. 483.
Roentgenographic Visualization of Liver and Spleen as Aid in Differential Diagnosis of Tumors of Abdomen. C. J. Tripoli, E. Haam and E. B. Lehmann, New Orleans.—p. 487.
Ragweed Situation in Southern States. O. C. Durham, North Chicago, Ill.—p. 492.
Chronic Appendicitis. W. W. Robinson, Memphis, Tenn.—p. 497.
Acute Conditions of Female Pelvis and Lower Abdomen. R. J. Field, Centreville, Miss.—p. 503.
Important Facts Regarding Prevention and Treatment of Diphtheria. J. A. Milne, Jackson, Miss.—p. 507.
Tonsillectomy by Fractional Electrocoagulation: Advantages and Disadvantages of Diathermy in Otolaryngology. G. B. Collier, New Orleans.—p. 515.
Some Common Ear Diseases. D. E. Staton, Columbus, Miss.—p. 520.
Control of Troublesome Cough in Pulmonary Tuberculosis by Use of Combined Bacterial Antigens with Extract Anterior Pituitary: Preliminary Report. E. A. Bertucci, New Orleans.—p. 525.
Responsibility of the Public for Its Own Death Rate. J. L. Levy, Clarksdale, Miss.—p. 528.

## Northwest Medicine, Seattle

**32:** 1-44 (Jan.) 1933

*Chronic Microcytic Anemia: Its Relationship to Menstrual Disturbances and Achlorhydria. C. B. Wright, Minneapolis.—p. 1.
Brain Abscess. D. G. Dickerson, Seattle.—p. 8.
Intractable Facial Pain: Relief by Deep Injections of Alcohol. A. J. McLean, Portland, Ore.—p. 16.
Evaluation of Vertigo Following Head Injuries. A. B. Murphy, Everett, Wash.—p. 25.
Lymphosarcoma: Case Report. C. V. Rugh, Klamath Falls, Ore.—p. 28.
*Further Studies and Experiences with Transfixion Suture Technic (Technic 3) for Transplantation of Ureters into Large Intestine. R. C. Coffey, Portland, Ore.—p. 31.

**Chronic Microcytic Anemia.**—Wright states that proper medicinal treatment will improve, often remarkably, but does not cure the chronic microcytic anemias. Achlorhydria is a minor contributing factor. Nevertheless, patients with achlorhydria and chronic anemia should be taken more seriously and they should demand special attention to their diet and general care. Menstrual disturbances are the important factor in the so-called microcytic hypochromic anemias and should receive first consideration in the treatment of these cases. His study of 250 patients and a review of the literature indicate that in these chronic anemias in women in late menstrual life, when no other cause can be found, a subtotal sterilization is an entirely justifiable procedure and is effective in the cure of the anemia.

**Technic for Transplantation of Ureters.**—Coffey transplanted ten ureters by the transfixion suture technic in six children for exstrophy of the bladder, without failure or serious consequence of any kind. While this operation is seemingly simple, there are certain points that are vital to the success of the operation: 1. The transfixion suture must penetrate the lumen of the ureter. 2. The transfixion suture must penetrate the intestinal mucous membrane. 3. The transfixion suture must be tied tight enough to cut through all the tissues in its bite. 4. The ligated stub end of the ureter should be anchored by a separate catgut suture to the muscular and peritoneal coats of the intestine. Notwithstanding the simplicity and apparent freedom from danger of the transfixion suture operation as applied in children with exstrophy of the bladder, the author still favors the operation of transplantation of the ureters by the tube technic in all cases of cancer of the bladder, vesicovaginal fistula and other indications found in adults, for the reason that the transplantation operation is completed at a single sitting. Moreover, in men with cancer of the bladder it is possible to do the cystectomy at the same operation also. He has had no deaths in adults following this operation except in cases of advanced cancer of the bladder, all of which deaths were reported in the *British Journal of Urology* in December, 1931.

## Ohio State Medical Journal, Columbus

**29:** 1-72 (Jan.) 1933

Abdominal Surgery in Children. N. W. Gillette, Toledo.—p. 23.
Migraine-Like Headache Due to Allergy. J. Forman, Columbus.—p. 28.
Ophthalmic Manifestations of Otic Disease. M. F. McCarthy, Cincinnati.—p. 31.
*Tularemia: Summary of Recent Researches, with Consideration of One Hundred and Three Dayton Cases. W. M. Simpson, Dayton.—p. 35.
Intracapsular Operation of Cataract: Survey of Fifty Years' Experience. J. W. Wright, Columbus.—p. 41.

**Tularemia.**—According to Simpson, during the past five years tularemia has rapidly assumed the position of an important public health problem. Its widespread prevalence in North America, together with reports of its existence in Norway, Sweden, Russia, Japan and England, indicates that the disease is probably world wide in its distribution. Newly discovered animal hosts and insect vectors indicate the ever widening spread of the disease and further insure its perpetuation. While the wild rabbit remains the most important source of infection for other animals and man, many new sources of human infection have been described. The 103 cases of tularemia encountered by the author represent the largest number of cases to be reported from such a circumscribed area. The clinical manifestations of the disease are distinctive and are not easily confused with any other disease. The agglutination test is highly specific. The goat antitularense serum, developed by Foshay, gives promise of providing a reliable specific therapeutic agent against tularemia. The intravenous injection of about 10 cc. of the antitularense serum on two successive days resulted in an abrupt cessation of fever, malaise, chills, sweats, arthralgias and myalgias, within forty-eight hours after the second injection. There also occurred a rapid reduction in the volume of the involved lymph nodes to an average of one half of their former diameters.

## Philippine Islands Med. Association Journal, Manila

**12:** 599-660 (Dec.) 1932

Observations Bearing on Question of Whether or Not Chaulmoogra-Group Drugs Have Any Special Action in Leprosy: I. Changes in Leprotic Skin Lesions Following Intradermal Injections of Various Oily Preparations. C. B. Lara and M. Lagrosa, Culion.—p. 599.
Changes in Anesthesia Following Antileprotic Injections of Iodized Hydnocarpus Wightiana Ethyl Esters. M. Lagrosa, Culion.—p. 604.
Medical Ethics from Army Officer's Point of View. K. Nelson, Manila.—p. 611.
Observations on Incidence of Pleurisy as Found at Autopsy, with Especial Reference to Pulmonary Tuberculosis. J. L. Ignacio, Culion.—p. 614.
Pharmacist and Physician. E. D. Aguilar, Manila.—p. 622.
My Experiences as Puericulture Center Physician. L. Gamboa, Silay.—p. 624.
Florencio Natividad, Alias Flor Intrencherado. J. A. Fernandez, Rizal.—p. 627.

## Philippine Journal of Science, Manila

**49:** 483-688 (Dec.) 1932. Partial Index

Determination of Organic Matter in Accumulator Sulphuric Acid Solutions. R. G. Myers, Cavite.—p. 581.
Avian Malaria Studies, VII: Plasmochin as Prophylactic Drug in Sporozoite Infections of Avian Malaria. P. F. Russell, New York, and A. M. Nono, Manila.—p. 595.
Id.: VIII: Bleeding Time in Canaries; Normal and in Malaria. P. F. Russell, New York.—p. 627.
Effect on Culex Larvae of Paris Green Diluted with Charcoal and Notes on Feeding Habits of Culex Quinque-Fasciatus Larvicide Studies, V. P. F. Russell, New York, and A. P. West, Manila.—p. 651.

## Puerto Rico J. Pub. Health & Trop. Med., San Juan

**8:** 99-254 (Dec.) 1932

Clinical Aspect of Schistosomiasis Mansoni. R. Girges, Tanta, Egypt.—p. 99.
Alexin Fixation and Agglutination Test in Brucella Infections. P. Morales-Otero and G. Monge, San Juan.—p. 193.
Report of Studies of 1932 Epidemic of Influenza in Puerto Rico. O. Costa-Mandry, P. Morales-Otero and J. Suárez, San Juan.—p. 205.
Some Observations of Antimosquito Screening and Screening Materials. W. C. Earle, Des Plaines, Ill.—p. 227.
Ultraviolet Light Intensity in Puerto Rico: II. L. G. Hernández, San Juan.—p. 249.

## Radiology, St. Paul

**20:** 1-68 (Jan.) 1933

New Application of Flat Bucky Grid to Any Angle, with Especial Reference to Sinus Work. P. F. Cole, Springfield, Mo.—p. 1.
Leontiasis Ossea. E. Freedman, Cleveland.—p. 8.
Transient K. V. P. and r Output from Air-Cooled Therapy Tube. M. J. Gross, Chicago.—p. 14.
*Investigation of Gaseous Decomposition Products of Roentgen-Ray Films. Grace Ballard, Milwaukee.—p. 18.
Absorption Curves and Spectra of Roentgen-Ray Beams. A. Mutscheller, New York.—p. 32.
*Pathology of Monomelic Flowing Hyperostosis or Melorheostosis. E. Kraft, New York.—p. 47.

**Gaseous Decomposition Products of X-Ray Films.**—A consideration of the results obtained in her investigation leads Ballard to the conclusion that cellulose acetate films are superior to nitrocellulose films, from a safety standpoint, for the following reasons: 1. Cellulose acetate films are more stable than nitrocellulose films. The latter readily decompose at 150 C., while acetate films must be kept at a high temperature in order to obtain decomposition. 2. Much larger amounts of gases are evolved from the flameless combustion of nitrocellulose films than from cellulose acetate films. Decomposition of the former is much more complete in a limited air supply, as nitrate films contain a large amount of oxygen compared to acetate films. 3. Hydrocyanic acid is liberated in smaller quantities from acetate films than from nitrocellulose films. The oxides of nitrogen are entirely absent from the gases liberated from acetate film. Carbon monoxide, as shown by other investigators, is the only toxic gas liberated in comparable quantities from both types of film.

**Monomelic Flowing Hyperostosis, or Melorheostosis.**—Melorheostosis is a flowing hyperostosis of a single extremity. In preference to other terms, Kraft proposes the name "monomelic flowing hyperostosis." He reviews the cases that have been described in the literature and states that four additional cases, not reported as yet, have been seen in the United States. In the early cases, the hyperostotic flow is confined to isolated parts of an extremity (circumscribed flow). In the advanced cases, the flow is either interrupted or continuous (interrupted flow, complete, and partial continuous flow). A disturbance of other parts of the body has never been definitely proved. Microscopically, the tissues do not present specific features. The disease is slowly progressive, but it may become stationary in the early, as well as in the late, stage for many years. The symptoms are rheumatic pain and limited motion of joints. In most cases the complaints are vague, and ankylosis of joints may cause relatively little concern. Only by roentgen examination can diagnosis be made. Occasionally, curving deformities of the fingers are sufficiently characteristic to cause one to suspect the disease prior to roentgen studies. The causation is still unknown, though the clinical features point toward a congenital nature. The lesions, although resembling other bone diseases, represent a separate entity and are benign in character.

## Southern Medical Journal, Birmingham, Ala.

**25:** 1197-1286 (Dec.) 1932

"We Owe a Cock to Aesculapius." L. J. Moorman, Oklahoma City.—p. 1197.
Diagnosis and Treatment of Sinusitis. F. E. Hasty, Nashville, Tenn.—p. 1202.
*Diagnosis and Treatment of Intestinal Amebiasis. C. F. Craig, New Orleans.—p. 1207.
Urinary Diseases of Pregnancy. H. W. E. Walther, New Orleans.—p. 1213.
Urologic Speculations. R. A. Hennessey, Memphis, Tenn.—p. 1216.
Relation of Diet to Heart Disease. C. S. Burwell, Nashville, Tenn.—p. 1217.
Progress in Obstetrics. W. B. Anderson, Nashville, Tenn.—p. 1219.
Antepartum Hemorrhage: Premature Separation of Placenta as Prominent Cause. E. L. King, New Orleans.—p. 1222.
Has the Surgical Pendulum Swung Too Far in Obstetrics? E. P. Allen, Oklahoma City.—p. 1224.
*Common Errors of Obstetric Practice. H. T. Best, Shreveport, La.—p. 1225.
Dihydranol in Treatment of Chronic Intestinal Toxemia. A. Eustis, New Orleans.—p. 1231.
Some Unexpected Effects of Small Doses of Drugs. C. Reynolds, Milwaukee.—p. 1233.
Marriage of Syphilitics. E. R. Hall, Memphis, Tenn.—p. 1235.
Neurology in Medical Curriculum. Carrol C. Turner, Memphis, Tenn.—p. 1238.
The Individual in Medical Teaching. K. M. Lynch, Charleston, S. C.—p. 1240.
Double-Plane Fluoroscope as Aid in Bronchoscopy: Report of Case. M. Equen, Atlanta, Ga.—p. 1242.
Kinks in Colon: Their Significance and Management. M. Smith, Miami, Fla.—p. 1244.
Lymphosarcoma: Case Report. May Owen, Fort Worth, Texas.—p. 1248.
Present Status of Midwifery in Florida. H. Hanson and Lucile Spire Blachly, Jacksonville, Fla.—p. 1252.
Methods for Increasing Efficiency of Sanitation Inspectors. C. R. Keiley, Richmond, Va.—p. 1258.
Public Health Program in Factories of Mississippi: Plans for Future Development. J. W. Dugger, Jackson, Miss.—p. 1263.

**Diagnosis and Treatment of Intestinal Amebiasis.**—Craig states that, since the diagnosis of intestinal amebiasis must rest on the demonstration of Endamoeba histolytica in the feces of the suspected individual, it is important that the physician be familiar with the symptoms and physical observations usually associated with the various types of the infection. If it is impossible to examine the feces for the ameba, and a serologic laboratory is available, the complement fixation test for amebiasis should be employed in diagnosis. The general treatment of amebiasis in those suffering from diarrheal or dysenteric attacks consists of rest in bed and attention to the diet and general physical welfare of the patient. If the dysenteric symptoms are acute, it is best to withhold all food for two or three days, and if food is given it should consist of barley water, egg albumin, milk with lime water and thin broths. When the acute symptoms subside, poached or soft boiled eggs, soft puddings, and thick gruels may be given, and as the patient improves a light soft diet may be substituted. During convalescence a full diet is gradually resumed, but extreme care is necessary to avoid foods that are known to irritate the intestine. Alcoholic drinks should be forbidden to all persons who have symptomatic amebiasis, as even in carriers excessive indulgence in alcohol often results in the appearance of the symptoms of diarrhea or of dysentery. Tonics are useful in convalescence and if patients are living in the tropics or subtropics a change to a cool climate often results in marked and rapid improvement, especially in those who have had repeated dysenteric attacks.

**Common Errors of Obstetric Practice.**—According to Best, the mistakes that are probably the most commonly made and the most serious to the pregnant woman are: (1) the use of solution of pituitary to induce labor, during the first and second stages of labor; (2) operating before complete dilatation of the cervix; (3) failure to make a complete diagnosis; (4) allowing a perineum to tear rather than doing an episiotomy; (5) failure to realize the indications for prophylactic forceps, or improper application of forceps; (6) vaginal examinations; (7) failure of the attending obstetrician to use some form of analgesia during labor; (8) failure to realize the indications for cesarean section, and (9) standardization of obstetric practice and fees.

## Wisconsin Medical Journal, Madison

**31:** 822-887 (Dec.) 1932

Transphrenic Infection. H. L. Beye, Iowa City.—p. 829.
Punch Prostatectomy. H. C. Bumpus, Jr., Rochester, Minn.—p. 831.
Renal Tuberculosis in Children. W. M. Kearns and S. M. Turkeltaub, Milwaukee.—p. 834.
Calcium Deficiencies in Pregnancies and Its Influences on the Child. H. A. Sincock, Superior.—p. 838.
Acute Substernal Pain. R. C. Cantwell, Shawano.—p. 842.
Injection Treatment of Internal Hemorrhoids. G. G. Stebbins, Madison.—p. 845.

**32:** 1-67 (Jan.) 1933

Management of Disorders of Menopause. E. L. Sevringhaus, Madison.—p. 9.
Tribrom-Ethanol as Anesthetic in Eye Surgery. F. A. Davis, Madison.—p. 14.
Roentgenologic Findings in Nontuberculous Lesions of Hip. R. P. Potter, Marshfield.—p. 19.
Psychology in Practice of Medicine. G. R. Duer, Marinette.—p. 21.
Squamous Cell Carcinoma of Gallbladder. S. B. Pessin and J. Dean, Madison.—p. 24.

## Yale Journal of Biology and Medicine, New Haven

**5:** 201-300 (Jan.) 1933

Factors Controlling Movement of Fluid Through Human Capillary Wall. E. M. Landis, Philadelphia.—p. 201.
Some Clinical Aspects of Accessory Lobes of Human Lungs. W. B. Soper, West Haven, Conn.—p. 227.
Present Status of Our Knowledge of Vitamins. A. H. Smith, G. R. Cowgill, R. W. Jackson and W. E. Anderson, New Haven, Conn.—p. 235.
Working Hypothesis for Experimental Study of Cancer. R. Dodge, New Haven, Conn.—p. 269.
End-Results in Treatment of Carcinoma of Rectum and Rectosigmoid. A. W. Oughterson, New Haven, Conn.—p. 271.

## FOREIGN

An asterisk (*) before a title indicates tnat the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

### British Journal of Anaesthesia, Manchester,

**10:** 47-90 (Jan.) 1933

Study of French Methods of Anesthesia. Madame Flexer-Lawton.—p. 48.
Modern Aids to Anesthesia. C. F. Hadfield.—p. 62.
Anesthesia for Intra-Oral Surgery. D. S. Middleton.—p. 74.

### British Journal of Radiology, London

**6:** 1-64 (Jan.) 1933

Radium as Therapeutic Agent: Case for National Control. A. H. Lee.—p. 7.
Neutron and Its Properties. J. Chadwick.—p. 24.
Presidential Address. F. L. Hopwood.—p. 33.
Fractures of Upper End of Femur in the Aged. J. N. Jacobson.—p. 39.

### Lancet, London

**1:** 1-64 (Jan. 7) 1933

Psychotherapy in General Practice. R. D. Gillespie.—p. 1.
Modern Conception of Nephritis: Its Bearing on Certain Problems of Life Assurance. T. I. Bennett.—p. 8.
*Anatomy of Asthma as Disclosed by Lipiodol Investigation. J. B. Christopherson.—p. 11.
Radiographic Diagnosis of Prostatic Enlargement. N. Ross.—p. 14.
*Slipping of Epiphysis of Head of Femur: Its Relation to Renal Rickets. J. F. Brailsford.—p. 16.
Facial Palsy and Infection with Zoster Virus. R. S. Aitken and R. T. Brain.—p. 19.

**Iodized Poppy-Seed Oil Investigation in Asthma.**—In Christopherson's opinion, examination by iodized poppy-seed oil is the correct procedure for all asthmatic persons over the age of 10 years. Iodized poppy-seed oil, being chemically and physiologically almost inert, is not a bronchial irritant and seldom precipitates a paroxysm. But, to anticipate any exacerbation during the process of injection and to control the bronchial reflex, 10 minims (0.6 cc.) of epinephrine 1:1,000 is given to the asthma patient hypodermically immediately before the oil is injected. The injection is a procedure that requires a little practice. The author injects it by way of the cricothyroid membrane, using a 0.5 per cent solution of procaine hydrochloride intradermally as a local anesthetic; he introduces 7½ minims (0.45 cc.) of a 5 per cent solution of cocaine into the (adult) larynx to abolish the cough reflex. The injection is given slowly with a curved trocar and cannula. The oil makes its way by gravity along the bronchial tree; if too much is given it may occupy the whole lumen of the tube and cause collapse of the lung, wholly or in part, or imperfect distribution is likely to ensue. Iodized poppy-seed oil makes its way not only by gravity but also by diffusion, spreading equally over the whole inner surface of the tube. The maximum dose for an adult is about 20 cc. More than this is apt to get into the alveoli, especially if the patient coughs and overcomes the sphincter action where the bronchiole becomes alveolus, or if there is frank emphysema. If the alveoli are injected, the bronchi will be obscured. For a child, from 3 to 5 cc. is enough. The few accidents that occur in iodized poppy-seed oil injections are due to improper technic. Provided there is no spasm of the bronchial muscles, the radiopaque oil penetrates with remarkable freedom into the minutest ramifications of the bronchial tree and if there is spasm of the bronchial muscles, or if there is spasm in a particular area of lung, it will not penetrate. Most of the oil is coughed up; some may be coughed up and swallowed, when it will pass the stomach unaffected by gastric juice but, coming in contact with the lipase of the pancreatic juice, it is broken up and some, seldom serious, iodine intoxication may ensue.

**Slipping of Epiphysis of Head of Femur.**—Brailsford states that slipping of the epiphysis of the head of the femur in adolescents is due to disorganization of the metaphyseal tissue, which destroys its capacity to withstand the static strains or the trauma to which the normal joint is subjected without harm. Renal rickets is the cause of this disorganization of the metaphysis in some cases and should be excluded before any operative measures are adopted. A roentgenogram of renal rickets is almost diagnostic; the changes may be seen in only one joint. Consolidation and repair of the metaphyseal tissue in renal rickets may be seen by roentgen examination to take place in as short a time as one month. The urine of all patients showing slipped epiphysis should be examined on several occasions for albumin. The roentgen appearance of the bones in renal rickets is to some extent an index of the renal condition.

### Practitioner, London

**129:** 641-740 (Dec.) 1932

Allergy and Some Allergic Diseases. W. L. Brown.—p. 641.
Classification and Nomenclature of Mental Disorders. R. D. Gillespie.—p. 665.
Some Legal Aspects of Mental Disease. T. S. Good.—p. 674.
Blood Pressure in the Psychoses and Psychoneuroses. C. W. J. Brasher.—p. 692.
Habits in Infancy. W. Sheldon.—p. 702.
Modern Treatment of Epilepsy. F. McLaughlin.—p. 711.
Muscle Strain and Muscle Weakness. W. E. Tucker.—p. 715.
Nutritive Value of Wines and Beers. W. F. Christie.—p. 721.
Recovery from Septicemia with Pneumonia, Pericarditis and Myocarditis Complicating a Case of Rheumatic Fever: Case Report. V. C. Cornwall.—p. 728.

**130:** 1-112 (Jan.) 1933

*Influenza. H. M. Fletcher.—p. 1.
Association of Gastro-Intestinal Diseases with Winter Weather and with Influenza. A. H. Douthwaite.—p. 15.
Acute Bronchitis. C. B. Levick.—p. 23.
*Fibrositis and Muscular Rheumatism. C. W. Buckley.—p. 29.
Institutional Influenza: Epidemic and Endemic. G. E. Friend.—p. 37.
*Treatment of Squint. A. F. MacCallan.—p. 48.
Some Chronic Prostatic Diseases: Their Symptomatology and Treatment. C. J. Marshall.—p. 55.
*Pyloric Incoordination. D. Levi.—p. 67.
Some Practical Suggestions for Dealing with Everyday Psychologic Problems in Child Life. F. H. Dodd.—p. 78.
*Carbon Dioxide Baths in Cardiac and Circulatory Disorders. R. Baumstark and T. Deglmann.—p. 90.
Catarrhal Jaundice. F. Ind.—p. 97.
Thyroid and Potassium Permanganate Treatment of Furunculosis. W. A. Ball.—p. 101.

**Influenza.**—Fletcher emphasizes that great care must be taken in the treatment of influenza after the fever has subsided. Relapses are common and a mild initial attack may be followed by a dangerous relapse. A useful rule is that, after the temperature has fallen, the patient should be kept in bed for as many days as the duration of the fever. An attack is often followed by general debility, depression of spirits and insomnia, which may persist for months. Should signs of cardiac involvement be present, the period of absolute rest must be prolonged. It may be advisable to continue the administration of digitalis in reduced doses for some weeks except in cases with a slow pulse. When the patient is able to get about, every precaution must be taken to avoid overexertion either mental or physical. He should not be allowed to resume his ordinary occupation until he has completely recovered. A change of scene and climate, especially a visit to the seaside, may do much to restore health of mind and of body. Tonics are indicated, such as iron, arsenic, strychnine and quinine.

**Fibrositis and Muscular Rheumatism.**—Buckley considers that spa treatment is perhaps the most effective of all measures in chronic muscular rheumatism. The regimen of rest and regulated mode of life with the skilled use of baths, massage and douches will often clear up the most obstinate cases when all other methods have failed. Colonic lavage, which is a feature in many spas, is of great value, whether or not constipation is a factor in the case. Whether the spa to be selected is of the thermal radioactive, the sulphur, or the saline group will be largely determined by the general constitutional type and also the wishes of the patient. There are definite advantages claimed for every kind of spa, and sometimes one succeeds where another fails.

**Treatment of Squint.**—MacCallan insists that in squint it is not merely approximate parallelism of the eyes which is aimed at by the surgeon but also good vision in each eye, with ability to judge depth, which is the third degree of binocular vision. Nevertheless, it must not be supposed that one's hopes are always realized. As regards actual danger to the eye after a squint operation, the author has never seen an eye lost, as the result of sepsis, in an experience of thirty years. The type of operation to be performed on patients with convergent squint varies with the degree of squint and with the degree of abduction of the squinting eye that can be effected when it is pulled outward with forceps. In small degrees of squint, a tightening up of the external rectus muscle or advancement may be indicated. In large degrees of squint in which full abduction of

the squinting eye is impossible, it is necessary to set back the ocular attachment of the internal rectus by recession. The old operation of subconjunctival tenotomy is no longer carried out, as it is a blind operation, the results of which cannot be foretold. In cases of divergent squint, the operation is usually advancement of the internal rectus muscle. While there is no doubt that greater success attends the treatment of squint when it is undertaken during early childhood, operation on adults who have convergent or divergent squint has great cosmetic value. In some cases great improvement of vision may be effected, and even occasionally binocular vision may be acquired, though this is rare. In conclusion, the author reminds all medical men whose practice brings them in contact with young children of the great importance of getting under skilled treatment at the earliest possible moment all cases of squint which persist after the first few months of life. In the majority of cases, if this is done the possibility of partial blindness of the squinting eye and the necessity for operation are avoided.

**Pyloric Incoordination.**—Levi believes it is a great mistake to speak of stenosis at all in explaining so-called congenital pyloric stenosis. Of all the innumerable patients examined post mortem, he has never seen a case of true stenosis of the sphincter opening, even though the hypertrophy on the gastric side may have been enormous. A sphincter is either shut or open—it is never in the half-way position. Failure of the stomach to empty itself is not due to stenosis. It is due to the failure of the sphincter to relax. Instances in which there is obstruction immediately after birth are in the author's experience rare, although the obstruction soon becomes manifest owing to failure of acquisition of the normal reflex. Many infants at birth do suffer from abnormality of their reflexes. Some reflexes are slow to appear. For instance, the esophageal reflex may be underdeveloped. Difficulty is then experienced in persuading the child to swallow. Assuming a late development of the reflex which opens the pylorus, it does not require a wide stretch of imagination to visualize an imperfectly balanced mechanism which would send the pylorus into spasm and which would subsequently lead to hypertrophy of the muscle. Development of muscle occurs rapidly in infants. This assumption explains how food is enabled to trickle through the pylorus during the first few weeks of life, and how it is held back in the stomach only when the muscle has become spastic and subsequently hypertrophic. This theory also brings into line two separate conditions that have been described, pyloric spasm and pyloric stenosis. Pyloric spasm in infants appears to be but an early manifestation of so-called pyloric stenosis. Some infants with pyloric spasm develop their normal gastric reflex and get well spontaneously; in others, the reflex is late in appearing and the muscle hypertrophies. They thus become examples of pyloric stenosis. Instances have occurred in premature children. The fetus may drink liquor amnii, and there is no logical reason why, in some rare instances, the pylorus should not hypertrophy before birth, being stimulated to do so by the abnormal peristalsis set up as a result of the ingested fluid. Pyloric spasm and pyloric stenosis may then be results of this underdevelopment of the gastric duodenal reflex, and the two lesions should be classified together as examples of pyloric incoordination. An examination of postmortem specimens reveals that the stomach is dilated and hypertrophied. Many of the stomachs have a capacity of more than 5 ounces. The muscle of the whole stomach is thickened, and this thickening is greatest at the pylorus. The duodenum is normal and the transition from the hypertrophic pylorus to the normal duodenum is sudden. In hardened specimens the pylorus, when viewed from the duodenum, looks like the os uteri externum, and it has a fornix of duodenal mucosa around it. The importance of this area has been emphasized by Browne, who regards it as a dangerous area when the incision is made to relieve the stenosis. This area is a zone of sudden transformation from hypertrophic muscle of the pylorus to the normal musculature of the duodenum. This fact should be borne in mind when operating on patients suffering from this condition, but other than this the zone has no material significance. Infants who succumb to this lesion become extremely emaciated, but apart from this the rest of the body appears to be normal.

**Carbon Dioxide Baths.**—Baumstark and Deglmann point out that auxiliary physical methods of the treatment of cardiac and circulatory disorders have been widely developed during the past twenty years or so and, in the aggregate, are often more important and more effective than drugs. Among these measures are rest in bed, suitable variation between rest and light work, and limitation of food and drink; and the former practice of venesection has come into favor again. But first among the methods of physical treatment known both to the medical attendant and to patients, in Germany at least, is the carbon dioxide bath. The value of these baths has long been vigorously discussed, chiefly because their use was mainly empirical, experimental data about their exact action being scanty. A scientific foundation for this form of treatment has now been built up. Although many problems still await solution, knowledge of its scope and limitations has now been so far defined that the mode of action of carbon dioxide baths was sufficiently important to be selected as the main subject of discussion at last year's balneological congress in Germany. In the sixties of the last century, Beneke of Marburg began the treatment of cardiac patients on an extensive scale with the Nauheim springs, which had previously been employed as brine baths for rheumatic and gynecologic conditions; subsequently Schott, Bode and the elder Groedel undertook the first scientific researches on these baths and their action. Nauheim and carbon dioxide treatment soon became well known in "heart cases," but Mackenzie criticized the Nauheim treatment, the results of which he had observed in numerous patients, stating that he had never seen successful results from baths of any description, or observed in patients who had visited Nauheim any beneficial effects that might not have been achieved by treatment elsewhere. He coined the expression "Nauheim wrecks" for patients who returned from Nauheim in a worse condition than when they went. The reason for his opinion is now clear; he stated that the claims of the spa physicians were contradictory and that there was no individualization of treatment. At that time not only was balneotherapy expected to achieve the impossible but it was also employed in conditions in which it would do far more harm than good. Cardiac conditions, now considered absolutely to contraindicate baths, were at that time the chief field of their use.

## Quart. Bull., Health Org., League of Nations, Geneva

1: 489-761 (Dec.) 1932

*General Principles Governing Prevention of Tuberculosis. E. Burnet. —p. 489.
System of Grading Milk in United States of America. G. S. Wilson. —p. 664.
Recommendations Regarding Serologic Syphilis Tests: Report Adopted by Health Committee at Its Nineteenth Session (October 1932). —p. 712.
Third Analytic Review of Reports from Pasteur Institutes on Results of Antirabies Treatment. A. G. McKendrick.—p. 725.

**Prevention of Tuberculosis.**—According to Burnet, the prevention of tuberculosis is a function of social hygiene and may include therapeutic measures, which have a prophylactic value. Tuberculosis mortality has begun to decline in practically all the civilized countries as a result of the progress in civilization. Special treatment (collapse therapy, rest cures, chrysotherapy) cures a certain number of patients, arrests disease in a still greater number and reduces case mortality. Preventive vaccination with B C G is innocuous, according to the data so far available. The most powerful social factors are housing, nutrition and education. Underfeeding promotes tuberculosis. Extra meals for school children who need them, with a well balanced diet and an adequate amount of vitamins, are a powerful factor in prevention. The home is a factor in spreading contagion, if it houses a case of open tuberculosis, and in its effect on general health and on the resistance of the individual to diseases. Education includes the inculcation of better habits of living with a view to improving the health both of the individual and of the community. It is necessary that medical students should be given instruction in tuberculosis, and it is also desirable that special courses be provided for the training of medical specialists and supplementary training courses for medical practitioners, medical specialists and visiting nurses. In the political and administrative framework the state is responsible for the technical direction and supervision of institutions. Social insurance for the protection of work, the worker's health and security is one of the most powerful adjuncts in the campaign against tuberculosis. The state should encourage cordial relations and technical and financial cooperation between the authorities responsible for the insurance organization and those responsible for the pre-

vention of tuberculosis. Public assistance should be designed to subserve the purposes of preventive medicine and social hygiene. The dispensary, the instrument *par excellence* of social hygiene, is the pivot of tuberculosis prophylaxis. The results of treatment, the ever increasing number of stabilized cases and of persons able to return to social life, necessitate the organization of postsanatorium assistance in institutions connected with dispensaries and sanatoriums. These institutions can hardly be expected to be self supporting; they should receive some part of the funds allocated to the campaign against tuberculosis.

## Chinese Medical Journal, Shanghai

**46:** 1071-1158 (Nov.) 1932

Statistics and Medical Research. P. G. Edge.—p. 1071.
*Transient Complete Heart Block with Adams-Stokes Attacks and Normal Auriculoventricular Conduction Between Attacks. S.-N. Cheer and T.-K. T'ang.—p. 1081.
Venoclysis. J. M. Rogers.—p. 1088.
Cholera Bacteriemia in Case of Typhoid Fever. C.-C. Ling.—p. 1092.
Carcinoma of Cervix Uteri Invaded by Endamoeba Histolytica. S. W. Lee.—p. 1096.
Chemical Studies of Mottled Enamel and Brown Stain. J. F. McIntosh, G. Montelius and Y. C. Ma.—p. 1099.
Ocular Neoplasms Among Chinese: Brief Clinicopathologic Report of Eighty-Two Cases with Discussions. W. P. Ling.—p. 1104.

**Transient Complete Heart Block.**—Cheer and T'ang present electrocardiographic records of a patient with the Adams-Stokes type of epilepsy due to transient ventricular standstill in a heart with normal conduction and mechanism between attacks. The epileptiform attack was caused by complete heart block for thirteen seconds with ventricular silence for three and a half seconds. There was a prolongation of the relative duration of the systole immediately after the ventricular stoppage. Immediately after the attack, conduction was normal; but subsequently the time was slightly prolonged. The patient made a rapid clinical recovery. The authors discuss the mechanisms involved. They believe that their patient's auriculoventricular conduction was impaired as the result of infection.

## Gynécologie et Obstétrique, Paris

**27:** 1-96 (Jan.) 1933

Spinal Anesthesia in Operative Obstetrics. P. Delmas—p. 1.
Blood Platelets and Puerperium. Laffont and Sirjean.—p. 8.
Ovarian Autograft with Conservation of Uterus in Treatment of Grave Salpingo-Ovaritis. G. Cotte and P. Colson.—p. 16.
*Transplantation of Endometrium. M.-G. Serdukoff.—p. 33.
*Inconveniences and Contraindications of Hysterosalpingography. P.-E. Morhardt.—p. 47.

**Transplantation of Endometrium.**—In the opinion of Serdukoff, the endometrium possesses an endocrine function as well as one of external secretion. Its functions are menstruation, linking with the chain of endocrine glands, formation of lipoids and formation of ferments. The endometrium has great vitality and resistance, which facilitates its transplantation. The author has performed the transplantation of endometrium from one woman to another in three cases of amenorrhea with destruction of the endometrium and obliteration of the uterine cavity; in a case of a grave symptomatic syndrome following the menopause he has made a transplant of endometrium accompanied by an ovarian graft. Restitution of the menstrual function was obtained in the first three cases, and in the fourth the distressing symptoms disappeared, the nervous condition of the patient was improved, and it is possible that the menstrual function may return. The author thinks that transplantation of the uterine mucosa is indicated in prolonged amenorrhea and sterility caused by atrophy or total absence of the endometrium, resulting from infectious inflammations, dissecting metritis, too energetic curettage or cautery. The presence of normal ovaries is necessary for the success of transplantation. Atrophy and disappearance of the endometrium secondary to castration or premature menopause should be treated by transplantation of the endometrium associated with transplantation of the ovaries. In these cases transplantation must be repeated till the endocrine equilibrium of the organism is restored. The technic of the operation consists in incision of the uterus along the median line of the anterior wall, extirpation of all the cicatricial tissue (after the permeability of the cervical canal has been ascertained) and implantation of several fragments of endometrium, freshly removed from another woman, into the uterine wall, where they are fixed by suture to the muscle or grafted into the incision of the muscle. The uterine wall is then closed with two sutures. Catheterization and dilation of the uterus is advised two weeks after the intervention and from time to time thereafter.

**Contraindications of Hysterosalpingography.**—Morhardt reviews the literature relative to the risks of hysterosalpingography under the headings of chemicotoxic, mechanical and infectious accidents. The reactions grouped under chemicotoxic accidents usually result from the injection of too large doses of iodized oil and include inflammatory reactions and iodism. The best way to establish the correct dosage is by roentgenologic control of the filling of the uterus and its evacuation. The chief mechanical accidents are ruptures of the tract, and they are most to be feared in cases of tubal pregnancy, uterine cancer, uterine fibroma and atrophy of the uterus. They can be avoided in most cases by using a manometer and not exceeding a pressure of from 200 to 250 mm. of mercury. Fat embolism constitutes another mechanical accident, and its occurrence depends not only on high pressure but on the permeability of the endometrium. According to some authors, the injection of iodized oil may produce abortion in case of recent pregnancy. Infectious complications usually result from the reactivation of a previous infection. To avoid these complications, aseptic precautions should be taken (uterine infection frequently exists even if the seropurulent content of the tubes is sterile), and the intervention should take place at a time distant from the menstrual period and only when all inflammatory symptoms have disappeared. Some authors think that the intervention can disturb the function of the tubes by producing an irritation or inflammation of the tubal mucosa which either prevents the ascent of spermatozoa or the descent of the ova, in the latter case favoring ectopic pregnancies.

## Policlinico, Rome

**40:** 243-282 (Feb. 13) 1933. Practical Section

*Contribution to Constitutional Status Lymphaticus. S. Calabrese.—p. 243.
Endocranial Echinococcus Cyst of Pia Mater. A. Businco.—p. 248.
Autopyotherapy in Empyema of Infants. G. Rosa Mallia.—p. 268.

**Constitutional Status Lymphaticus.**—Calabrese discusses the genesis of status lymphaticus and states as his own opinion that persons with this condition belong in the category of robust beings, because the lymphatic tissue acts as a defense mechanism against infection. He observes that, despite the defensive tissue, most patients with lymphatic disorders are susceptible to infection. This he attributes to a constitutional deficiency in reaction to stimuli through a retarded metabolism. He states that lymphatic patients generally have a slow metabolism either because of their youth, which is the usual time for the appearance of signs of lymphatism, or because during their embryonic stage there was a prevalence of the entodermic leaf, according to De Giovanni, producing more stroma and less parenchyma, on account of an inferior degree of differentiation of the original cell layers. In explaining erethistic lymphatism the author states that the continuous infections that produce hyperfunction of the lymphatic tissue, and the slow metabolism that gives rise to its excessive nourishment, create an increase of the lymphatic tissue and therefore the picture of lymphatism.

## Archiv für klinische Chirurgie, Berlin

**174:** 1-208 (Feb. 2) 1933

*Gas Gangrene and Its Treatment. G. Effkemann.—p. 1.
*Diverticulosis of Colon and Its Complications. R. Bumm.—p. 14.
Experimental Joint Inflammation in Young and in Grown Up Animals. T. Nakamura.—p. 32.
Influencing Sugar Metabolism by Operative Means. Y. Komatsu.—p. 65.
Symptomatology of Myxoglobulosis of Appendix. H. Margulies.—p. 99.
Eden's Reconstruction Operation for Posterior Dislocation of Shoulder Joint. W. Zahn.—p. 107.
Symptoms and Diagnosis of Retroperitoneal Conditions Not Associated with Urinary Organs. H. Vietben.—p. 116.
Morphologic Changes in Wrist Joint After Removal of Os Lunatum. H. Dieterich.—p. 146.
Changes in Cranial Bones in Meningiomas. J. Wienbeck.—p. 151.
Stieda's Shadows on Inner Aspect of Femoral Condyles. R. Andreesen.—p. 162.
Pathogenesis of Nonspecific Diseases of Spongiosa of Bones. W. Block.—p. 172.

**Gas Gangrene.**—Effkemann was able to collect from the clinics of Berlin for the period from 1928 to 1931 thirty-four cases of gas gangrene infection ending in recovery and nineteen cases ending fatally. In his experiments with mice and guinea-

pigs he found that contamination of an incision with garden soil yielded other pathogenic anaerobes besides Bacillus welchii, which was found in every experiment. The parasymptomatic anthrax bacillus was present in 48 per cent, and B. fallax in 38 per cent. Besides these he was able to cultivate a number of unidentified anaerobes capable of producing a disease picture of their own. When incisions were left open, B. welchii failed to develop an infection. The same was not true of the para-anthrax bacillus or of B. novyi. These were much more toxic and more readily activated than B. welchii. The author's experimental studies with the new anti-gas gangrene serum prepared by the firm of Behring point to the efficacy of polyvalent serums. Because B. welchii was found in all his clinical cases, the author felt that this component should be higher than it is in the new serum or that a monovalent serum should be used instead. He considered the antianthrax antitoxic component in the new serum not sufficiently effective. Surgical solution of chlorinated soda and potassium permanganate proved most useful as antiseptics in his clinical cases.

**Diverticulosis of Colon.**—According to Bumm, most diverticula of the large intestine are not true diverticula. The principal factors in the production of diverticula are the increased intra-abdominal pressure, caused principally by constipation, and abnormally wide openings in the intestinal wall for the passage of blood vessels. Both conditions are apt to be present in elderly obese persons. Diverticulosis is much more frequent than is generally believed. The colon of possibly every third person past 50 is the seat of one or more diverticula. The descending colon and the sigmoid are the seats of predilection. Symptoms are the result of complications and not of diverticulosis only. Of particular significance are the infectious processes in connection with diverticula. The acute infections develop on the convex surface of the intestine and give rise to symptoms of appendicitis or, in the case of perforation into the free peritoneal cavity, of peritonitis. The chronic infections involve the root of the mesentery of the large intestine and lead to the formation of inflammatory stenosing tumors, which are difficult to differentiate from a malignant growth. The mild chronic cases are to be treated medically. The acutely inflamed, the malignant transformation and the stenosing tumefaction demand surgical intervention. The best results are obtained by resection of the portion of the bowel that is the seat of diverticulosis. The author reports six cases and emphasizes the variability of the clinical picture.

## Deutsche medizinische Wochenschrift, Leipzig

**59:** 241-278 (Feb. 17) 1933

Present Status of Chemical Research on Vitamins. A. Scheunert.—p. 241.
So-Called Traumatic Encephalopathies. F. Kehrer.—p. 244.
*Hemorrhages in Para-Esophageal Hernias. V. Schilling.—p. 247.
Experiences with Morphine Withdrawal in General Hospital. E. Haase and J. Wittke.—p. 249.
*Meningitis in Children Caused by Influenza-Like Bacilli. P. von Gara.—p. 252.
*Lead Poisoning and Gastric Ulcer. A. Peipers.—p. 254.

**Hemorrhages in Para-Esophageal Hernias.**—Schilling reports three cases of displacement of the stomach in the hiatus esophageus and reviews two other cases. The displacements were of the type designated as "para-esophageal hernia," in which there exists an intussusception of parts of the stomach besides the esophagus into the pleural cavity. All five cases demonstrate the great significance of hiatus hernias for the pathogenesis of chronic hemorrhages produced by incarceration, gastric ulcer and eventually carcinoma. The vagueness of the symptoms and the severity of the anemic manifestations led several times to an incorrect diagnosis of pernicious anemia and to liver therapy, the more so since megalocytes were observed and since the gastric symptoms seemed to indicate a gastrogenic origin. However, roentgenoscopy revealed the true nature of the disorder, by showing the displacement of a part of the stomach into the thorax. Moreover, a careful study of the blood pictures revealed the secondary character of the anemia that was the result of hemorrhage. The author points out that two of the patients, in addition to the other symptoms, exhibited the syndrome designated by von Bergmann as "epiphrenal" or "gastrocardial." One of the patients was at first treated for heart disease. The author thinks that with the greater exactness of the diagnosis of gastric disorders, which is made possible by roentgenoscopy, the forms of hiatus hernias described by him will be more frequently recognized. He emphasizes that because of the possibility of an erroneous diagnosis, and because an early recognition makes surgical cure possible, these hernias should be given consideration by the internist.

**Meningitis and Influenza-Like Bacilli.**—Von Gara describes two cases of meningitis in children, aged 6 months and 3½ years, respectively. The cases are noteworthy because rod-shaped organisms were found, which resembled Pfeiffer's influenza bacillus. The gram-negative rods differed from the typical Pfeiffer influenza bacilli mainly in that culture was possible (particularly in one case) in mediums free from hemoglobin. To be sure, the viability of the cultured bacilli was extraordinarily slight and further cultivation soon became difficult even in mediums containing hemoglobin. The cultured bacilli were not pathogenic for animals (rabbits, guinea-pigs and white mice). Extensive serologic studies were impossible on account of the great sensitivity of the organisms and of the fulminant course of the disease. However, in the first case the bacillus was agglutinated by the homologous serum of the patient in a dilution of 1:50. The simultaneous occurrence of pneumococci in the second case does not impair the pathogenic significance of the gram-negative influenza-like rods, for it has been observed by others that in cadavers the Pfeiffer influenza bacilli usually are accompanied by pneumococci. The author points out that these two cases corroborate the formerly reported observation that there is no connection between influenza bacillus meningitis and influenza epidemics, for these two cases were observed during June and July of 1932, when there was no influenza epidemic.

**Lead Poisoning and Gastric Ulcer.**—Peipers desires to call attention to the fact that lead colic and spastic constipation are not the only reaction of the gastro-intestinal canal during chronic lead poisoning, but that there is also a tendency for spastic conditions with involvement of the vascular system of the upper portions of the digestive tract. On the basis of a clinical history, he shows that lead poisoning may produce the conditions that lead to the development of gastric ulcer.

## Deutsche Zeitschrift für Chirurgie, Berlin

**239:** 1-240 (Jan. 30) 1933. Partial Index

*Blood Transfusion. H. Bürkle-de la Camp.—p. 1.
Experimental Studies with Inhibition of Iso-Agglutination by Warmth and Its Relation to Blood Transfusion. H. Lützeler.—p. 18.
*Influence of Anatomic Characteristics on Localization in General Sepsis. W. Schulze.—p. 34.
Effect of Weather on Occurrence of Embolism and Perforation of Gastric Ulcers. F. Scheidter.—p. 107.
Studies on Question of Pulmonary Ligament. W. Schulze.—p. 127.
Histologic Studies of Electrocoagulation of Pulmonary Tissue. H. Zschau.—p. 150.
Constriction of Esophagus in Cervical Spondylitis Deformans. W. Büssem.—p. 229.
Pathology of Duodenal Diverticulum. A. Lob.—p. 234.

**Blood Transfusion.**—Bürkle-de la Camp points out that occasional occurrence of untoward results and even death may follow blood transfusion despite blood grouping and direct testing. Faulty grouping, and changes in the agglutinating property after the test has been made, as well as the high agglutination titer of the donor's serum, are possible causes. Physiochemical changes of colloidal character taking place in the blood of the recipient as the result of the morbid process from which he is suffering contrasted with the colloidal state of the blood of the normal donor may likewise account for otherwise unexplainable reactions. The biologic testing can be depended on when the serologic method is not available. The author sees an additional safeguard in crossed serum-erythrocyte testing just before the transfusion. The experience in Lexer's clinic does not support the view that anaphylactic phenomena are likely to follow the use of the same donor for repeated transfusions. Because they have no professional donors, it was necessary to resort to the use of donor patients with minor illnesses. Most striking results were obtained with transfusions in acute hemorrhages. It likewise proved to be the most effective means of treating chronic parenchymatous bleeding and the various conditions characterized by delayed blood coagulability. A pronounced detoxifying effect was observed in poisoning by various gases when blood transfusion was administered following removal of blood by venesection. The author calls attention to the use of small, oft repeated transfusions in

acute surgical infections, particularly in general infections. The patients felt better and reacted more vigorously, and the fever as a rule declined from twelve to twenty-four hours later.

**General Sepsis.**—Statistical studies from Lexer's clinic in Munich show that there were 365 cases of general sepsis among the 60,000 patients treated during the last ten years. Schulze found that the spread of infection was influenced both by the extent of the original focus and by localization. The larger the original infection, the more likely was the invasion of the general circulation. Infections about the face were likely to become generalized because of the rich blood and lymph supply. The most frequently involved organ in general sepsis was the liver, but the infection rarely proceeded to abscess formation. Next in frequency was the spleen. It was found enlarged in 151 of the 365 cases of sepsis. Abscess formation, however, was here likewise infrequent. In order to determine what anatomic features determined localization as well as resolution or, on the other hand, abscess formation, the author studied the effect of muscular contractions on the venous pressure in a freshly amputated human leg. He found that muscular contractions caused a temporary fall in the venous pressure and thought that these fluctuations facilitated the localization within them of infected matter. He injected a mixure of india ink into the veins of rats and observed that localization in the capillaries of different organs varied as to both the amount and the manner. It depended apparently on the anatomic differences in the capillaries. Three varieties of capillaries were distinguished: (1) wide, with slow circulation and the closest resemblance to the reticulo-endothelial system (capillaries of the liver, spleen, bone marrow and lymph nodes); (2) elongated, convoluted, inconstant as to their width and much less closely related to the reticulo-endothelial system, as seen in the lungs and kidneys, and (3) elongated, narrow, least related to the reticulo-endothelial system (capillaries of muscles, the periosteum and the brain). The ink was found in a finely divided form within the capillaries of the first group. Rapid and effective breaking up of the foreign material and its removal by lymph and blood vessels were in evidence. The capillaries of the second variety were seen to be completely blocked by ink emboli in places. The breaking up of the foreign material, however, was in evidence even here. In the third variety, massive blocking with ink emboli with little evidence of removal was noted. Analysis of numerous cases of general sepsis emphasizes the significance of these observations as regards the matter of localization in blood infections. Organs with wide capillaries and a close resemblance to the reticulo-endothelial system are always involved in blood infections. However, formation of abscesses in them is not frequent. The organs with narrower capillaries and less resemblance to the reticulo-endothelial system frequently contain abscesses in addition to the evidence of cellular activity on the part of the reticulo-endothelial system. Localization is infrequent in the third variety but most frequently goes on to abscess formation. Capillaries in the vicinity of a focus were found to be dilated and, in the animal experiment, laden with india ink. This fact points to the etiologic importance of the locus minoris resistentiae in the matter of localization in general sepsis.

## Die ärztliche Praxis, Vienna

**7:** 33-64 (Feb. 15) 1933

Circulatory Therapy in Surgery. N. Jagić.—p. 33.
*Value of Blood Transfusion in Obstetrics and Gynecology. H. Heidler.—p. 36.
*Diagnosis and Differential Diagnosis of Perforated Gastroduodenal Ulcer. F. O. Mayer.—p. 38.
Malignant Diphtheria. H. Mautner.—p. 45.
Evaluation of Bilateral Pneumothorax. A. V. Frisch.—p. 46.
Simulation of Mental Diseases. K. Grosz.—p. 47.
*Therapy of Allergic Disturbances from Point of View of Internist. F. Pineles.—p. 49.
Tumors of Kidney. V. Blum.—p. 52.

**Blood Transfusion in Obstetrics and Gynecology.**—Heidler's observations on the value of blood transfusion in obstetrics and gynecology were made in forty-two cases. A tabular report, in which he lists the indications for blood transfusion, shows that he employed it in the following conditions: atony of the uterus after delivery, placenta praevia, tearing of the cervix, incomplete abortion, rupture of tubal pregnancy, anemia of pregnancy, toxicoses of pregnancy, puerperal sepsis, metrorrhagia, myoma, before gynecologic interventions, and in postoperative hemorrhage. Nine of the forty-two patients died. In none of these fatalities was the blood transfusion the cause of death, but it was ineffective in preventing the fatal outcome. The experience gained in these cases and the review of a number of fatal hemorrhages in women in whom blood transfusion was not resorted to convinced the author that blood transfusion has only a limited applicability in obstetrics and gynecology, since the infusion of epinephrine-sodium chloride or of dextrose is generally sufficient. However, occasionally there are cases in which a blood transfusion is the only means of saving the patient's life.

**Diagnosis of Perforated Gastroduodenal Ulcer.**—Mayer, after describing the symptomatology of perforated gastroduodenal ulcer, discusses in detail its differentiation from the numerous other acute disorders and emphasizes that the life of the patient depends on early diagnosis and early operative treatment. He maintains that the mortality of acute surgical abdominal diseases is the mortality of being too late with the operative intervention. He thinks that it is far better to open the abdomen because of an erroneous diagnosis than to be too late with the intervention.

**Therapy of Allergic Disturbances.**—Pineles defines allergic diseases as disorders that develop suddenly with a more or less characteristic syndrome, affect primarily the capillaries and the smooth musculature, and can frequently be traced to the influence of allergens. Serum disease, bronchial asthma, hay fever, urticaria, Quincke's edema, membranous colitis, certain cases of migraine, epilepsy and hemorrhagic purpura are mentioned as the most important allergic disorders. With the exception of hay fever and urticaria, which interest primarily the laryngologist and the dermatologist, the author discusses the causes, symptomatology and treatment of all these conditions. He gives the general rules of the procedure to be followed when an allergic condition is probable. He stresses the importance of careful anamnesis, of the test for the hemoclastic crisis and of the cutaneous reactions. In discussing the desensitization in cases of food allergens, he evaluates the oral and the parenteral method.

## Jahrbuch für Kinderheilkunde, Berlin

**138:** 129-248 (Feb.) 1933

Scarlet Fever and Cardiac Defects. W. J. Moltschanow.—p. 129.
Chorea Minor: Clinical Aspects and Etiopathogenesis. O. Krönig.—p. 160.
*Hyperglycemia Following Lumbar Puncture. H. Schönfeld.—p. 174.
Atmospheric and Climatic Influences on Organism of Children: Curative Value. L. Moll.—p. 179.
Investigations on Cholostrum Formation. M. Hohlfeld.—p. 185.
Clinical Aspects of Secondary Pneumonias in Measles. R. Grosser.—p. 200.
*Use of Concentrated Barley Gruel During Nursling Age. M. J. Olewsky, S. A. Gill and S. B. Rodkin.—p. 219.
Treatment of Mastoiditis. V. Hinsberg.—p. 233.

**Hyperglycemia Following Lumbar Puncture.**—Schönfeld points out that Mader has shown that the introduction of foreign substances into the spinal canal, particularly the introduction of air, is followed by an increase in the blood sugar content, but he has not observed that simple withdrawal of spinal fluid will lead to an increase in the blood sugar content. By following up an accidental observation, the author made the discovery that withdrawal of fluid from the lumbar canal leads to a considerable hyperglycemia in the majority of children and nurslings. In the Leipzig children's clinic he found that the blood sugar values as a rule were unusually high after, but not before, the lumbar puncture. A tabular report indicates that the blood sugar increases rapidly following the puncture and after about thirty minutes again approaches the initial values. The author thinks that Mader failed to make this observation because he did not not withdraw the blood earlier than thirty minutes after the puncture. Whether the quantity of the withdrawn fluid is proportional to the increase in the blood sugar was not determined.

**Barley Gruel for Nurslings.**—According to Olewsky and his collaborators, rice gruel has been employed successfully in the treatment of acute nutritional disturbances of nurslings. They think that the efficacy of this method is the result of the fact that the concentrated polysaccharides not only fulfil the demand for an easily digestible and assimilable food of sufficient caloric value but also provide an unfavorable medium for bacterial growth. In view of the fact that rice, being an

imported grain, proved rather expensive, the authors investigated whether gruel of barley could not be used for the same purpose. Following a comparison of the chemical composition of the two substances, they report their experiences with barley gruel on 133 children varying in age between 1 month and two years. Some of the children were breast fed, some received breast milk and other foods, others were artificially fed, and the older children received a mixed diet. The disorders for which they required treatment were dyspepsia, intoxication and colitis. The authors emphasize that they do not consider the gruel and carbohydrate treatment a panacea for all nutritional disturbances of infants, but they are convinced that concentrated gruel supplies the required calories. The plan they followed in the feeding with barley gruel was in its main aspects the same as that which had been adopted in the treatment with rice gruel. After discussing their clinical observations they describe experiments on animals and reach the conclusion that concentrated barley gruel is an adequate substitute for rice gruel.

## Klinische Wochenschrift, Berlin

**12**: 209-248 (Feb. 11) 1933

Rôle of Regulatory Mechanisms in Metabolism. S. Isaac.—p. 209.
Intermediate Processes in Glycolysis in Musculature. G. Embden, H. J. Deuticke and G. Kraft.—p. 213.
*Action of Vitamin Factors on Growth, Duration of Life and Fertility. F. Groebbels.—p. 215.
*True Menstrual Hemorrhage in Castrated Women Following Administration of Follicle and Corpus Luteum Hormones. C. Kaufmann.—p. 217.
Elimination of Xylose as Measure of Renal Function. Ella H. Fishberg and L. Friedfeld.—p. 218.
*Is Determination of Lipase Superior to Diastase Demonstration in Diagnosis of Acute Disorders of Pancreas? F. Bernhard.—p. 221.
*Acid Base Equilibrium and Edema Formation. O. L. E. de Raadt.—p. 224.
Sodium Formate as Substitute for Sodium Chloride. J. Freund.—p. 226.
Extravascular Spontaneous Changes of Human and Animal Erythrocytes. R. Doerr and S. Seidenberg.—p. 227.

**Action of Vitamins on Growth, Duration of Life and Fertility.**—Groebbels made his experiments on rats. As basic food the animals were given a fodder having the following constituents: defatted casein 420 Gm., mixed salt 245.6 Gm., rice starch 2,352 Gm., palmitin 600 Gm. and filter paper 80 Gm., the vitamin B requirements being supplied by 452 Gm. of yeast. This mixture was baked into biscuits and fed to the animals together with drinking water. As additions the author chose a substance designated as "ossin," containing cod liver oil and egg yolk (vitamins A, B and D), cod liver oil (vitamin A and D) and viosterol (vitamin D). He found that whereas the basic food, containing only vitamin B in the form of yeast, did not reduce the fertility, the addition of ossin, cod liver oil or viosterol reduced the fertility. The author thinks that the latter effect is the result of the action of vitamin D, which increases proportionately to the time during which, before littering, the female rat has received this vitamin. The young that receive only mother's milk and the basic food live longer as the period shortens during which the mother animals received the basic food before littering. Addition of ossin to the basic food of the mother animals and of the young has a more favorable effect on the duration of life than has the addition of cod liver oil or viosterol. If the mother animals are given the basic food with the additions beginning on the day of littering, and the young are given the same additions besides the mother's milk and the basic food, it can be observed that the growth process is least favorable if the addition is viosterol. Addition of ossin has a better effect on the growth than the same amount of cod liver oil. The action of the cod liver oil contained in the ossin is improved by the egg yolk.

**Menstruation of Castrated Women Following Hormone Therapy.**—Kaufmann states that in two women who, several years previously, had undergone surgical castration and who, as a result of this, had been amenorrheal and had had an atrophied uterine mucosa, the administration of the two genitally active hormones of the ovaries, the follicle hormone and the corpus luteum hormone, produced true menstrual bleeding; that is, with shedding of a real decidua menstrualis. He concludes that these two hormones are the only two necessary to produce the menstrual changes in the endometrium. He considers it of great significance for the evaluation of the functional capacity of the hormone preparations that it has been possible to produce a true menstrual hemorrhage in women who have no ovaries; but the most important result of his studies was the observation that the quantities of hormones necessary to produce menstrual changes in the uterine mucosa of castrated women are much larger than those heretofore employed in ovarian hormone therapy.

**Diagnosis of Pancreatic Disorders.**—Bernhard observed an increase in the atoxyl-fast lipase content of the blood serum in sixteen patients with acute pancreatic disturbances. He finds that the lipase demonstration is a valuable diagnostic aid in the recognition of acute necrosis of the pancreas but it gives no information about the severity of the condition. The simultaneous determination of diastase and lipase in various acute pancreatic diseases shows that the increase of diastase in the urine subsides more rapidly than does the increase of lipase in the blood. For this reason the lipase demonstration is superior to Wohlgemuth's method, particularly in the various forms of pancreatic necrosis. In acute pancreatic diseases the increase in the lipase content is evidently just as rapid as the increase in diastase. Occasionally there are cases in which both ferment methods fail. The author describes a case in which only the lipase was considerably increased. In diseases of the biliary tract, particularly following severe gallstone attacks, there is sometimes an increase in the lipase content in addition to the diastase increase. The fact that in these cases the lipase decreases but slowly is a disadvantage in the recognition of acute necrosis of the pancreas. The atoxyl-fast lipase content of the blood is also generally increased in chronic pancreatitis; in this condition the lipase test and the diastase demonstration deserve the preference. An increase of the atoxyl-fast lipase in the blood is observed occasionally in struma, diabetes mellitus, pernicious anemia, hypertrophy of the prostate, and carcinoma. This, of course, detracts from the value of the method in the diagnosis of pancreatic diseases.

**Acid Base Equilibrium and Edema.**—De Raadt maintains that, as soon as the renal ammonia production becomes insufficient for the elimination of acids (relative renal insufficiency), the organism compensates its deficiency in bases by extrarenal ammonia formation. This ammonia is not only the poison of uremic and eclamptic intoxication but also the poison of the diabetic coma designated as "acid intoxication" or, expressed differently, there is no acid intoxication but only a compensatory ammonia poisoning. The author shows that edema plays only the rôle of an alkali depot and that the only factor causing edema formation is an uncompensated renal acidosis. Apparently this does not apply to nephrosis, in which acidosis is frequently absent, although there is considerable edema formation. But the author thinks that acidosis is absent in these cases only because it is completely compensated extrarenally (continuous edema resorption). This self alkalinization becomes evident in the concurrence of an increased hydrogen ion concentration in the urine and an increased ammonia number. The author shows that the decrease in the colloidosmotic pressure of the blood is of no importance in edema formation and that the so-called osmotic edemas are the result of an uncompensated acidosis. To prove his opinion that the edemas of patients with cardiac decompensation do not differ from the edemas of patients with renal disease, he cites the following factors: 1. In patients with decompensated cardiac disorders there exists a general acidosis as the result of circulatory disturbances in the lungs (impaired carbon dioxide elimination) and in the kidneys (reduced renal ammonia production). 2. Since the end products of metabolism are of acid character, the acidosis must be strongest where the circulatory disturbance is greatest; that is, in the lower portions of the body. 3. The edema of patients with heart disease contains nearly as much ammonia as the nephrotic edema (7 mg. per hundred cubic centimeters compared to from 8 to 10 mg.), and the extrarenal compensation of the acidosis is here likewise accomplished by ammonia formation. As another factor of edema formation the author calls attention to the increased permeability of the capillary wall, which is the result of the ammonia formed in the tissues. In regard to the therapy he states that in patients with renal disease the extrarenal ammonia formation and with it the edema formation can be counteracted by the administration of alkali, but that acid therapy involves danger.

## Monatsschrift für Kinderheilkunde, Berlin

**55:** 241-476 (Jan. 13) 1933. Partial Index

Erythema Nodosum Endemic in Hospital Ward. O. Göttche.—p. 241.
Comparative Observations in Repeated Poliomyelitis Epidemics in Same Locality. W. Pockels.—p. 259.
Incidence of Tuberculosis in Various Growth Periods of Childhood: Significance for Welfare Work. I. Peiser.—p. 270.
*Peculiarities of Osteomyelitis in Early Childhood. G. Paschlau.—p. 280.
*Aspects of Phenobarbital Intoxication. Anneliese Weidemann.—p. 307.
Chlorine Intake and Function of Chlorine Depots During Nursling Age. G. Török.—p. 312.
Capillaroscopic Studies. E. von Lederer.—p. 327.
Accompanying Symptoms of Operative Treatment of Pylorospasm in Nurslings. W. Munting.—p. 341.
*Infectious Forms of Encephalitis During Childhood. P. Eiwin and S. Wurman.—p. 365.
*Rare Manifestation of Tuberculous Infection. K. Ochsenius.—p. 433.

**Peculiaries of Osteomyelitis in Early Childhood.**—Paschlau points out that the osteomyelitis of early childhood, particularly that of the first year of life, differs considerably from that of older children in its anatomic, clinical, prognostic and therapeutic aspects. Osteomyelitis of early childhood is usually localized at the ends of the long bones, to both sides of the epiphyseal line. As a result of this localization, the osteomyelitic suppurations have a tendency to spread underneath the periosteum and into the soft parts, instead of toward the diaphysis and the medullary cavity. The author thinks that this tendency of the suppuration to progress outward explains why the osteomyelitis of early childhood is generally less severe and of shorter duration than are the forms that develop later. He discusses the incidence of osteomyelitic foci in the different bones and the various complications, such as suppuration of the neighboring joints, separation of the epiphysis and metastasization. The clinical course of osteomyelitis varies greatly during early childhood. It occurs in all forms, from the mild focal disorder without high fever and without disturbance of the general condition to the fulminating septic general infection that ends fatally within a few days. The most frequent form is a local disturbance of medium severity. Its onset is acute, with high fever, the affected member showing rapid phlegmonous swelling. Softening sets in within a few days and the abscesses of the soft parts generally develop within the first week, so far that incision may be resorted to. In some cases the temperature decreases after this, unless retention of pus causes a new increase. In other cases the suppuration spreads and involves the joints. The author emphasizes that the clinical character of osteomyelitis during early childhood is determined not by chronic fistulous suppuration and formation of sequestrums but by severe complications, especially articular suppurations. He discusses nonsuppurative exudates that concur with osteomyelitis, also osteomyelitic arthritis, septic osteomyelitis, differentiation from similar disturbances, hematogenic osteomyelitis of the cranium, and vertebral, maxillary and costal osteomyelitis. In regard to the treatment it is stated that, in small children with uncomplicated osteomyelitis of the tubular bones, incision of the subperiosteal abscesses and of those of the soft parts is generally sufficient. In osteomyelitic articular empyemas, punctures and small incisions without insertion of drains gives the best results. Careful nursing and nutrition are of vital importance. If anemia develops, injection of human blood or a suitable diet may prove helpful and, if not, treatment with iron, copper, liver and arsenic should be resorted to.

**Intoxication with Phenobarbital.**—Weidemann relates the clinical history of a girl, aged 3, who, nine months before, had suffered from measles with a severe bluish red exanthem. When the child came under the author's observation, it had had whooping cough for four weeks, and treatment with phenobarbital had been instituted sixteen days previously. For twelve days the child had been given four tablets a day; that is, the daily quantity of phenobarbital was 0.06 Gm. Then the medicament was discontinued, because suddenly the temperature increased to 39 C. (102.2 F.), vomiting set in, the pharynx was reddish and the entire body became covered with a light red exanthem. The physician in charge diagnosed the condition as scarlet fever and injected scarlet fever streptococcus serum. In spite of this the exanthem became more severe within the next two days and the general condition became poorer. On the basis of the anamnesis and of the clinical manifestations during the first few days, measles as well as scarlet fever could be excluded. Phenobarbital intoxication was suspected because the cutaneous manifestations resembled those that have been observed as the result of another barbituric acid preparation and the described case resembled that form of intoxication also in regard to the incubation period (from eight to twelve days) and the blood picture. Unusual aspects of this disturbance are the mucous membrane manifestations, the extraordinarily large lamellar desquamation and the protracted persistence of the cutaneous manifestations: in the reported case, remainders of the exanthem in the form of pale brownish pigmented spots were still visible after six months. The author considers the condition an anaphylactoid disorder.

**Infectious Encephalitis During Childhood.**—Eiwin and Wurman give the following summary of their observations on infectious encephalitis: 1. The incidence of infectious encephalitis has increased in recent years. 2. Encephalitis may develop as a complication of various infections. 3. The clinical aspects of infectious encephalitis in children are extraordinarily diverse, and they differ frequently from the course this disease takes in adults. 4. The frequent deviations from the classic form of encephalitis can be explained by the syndrome that is produced by the involvement of the extrapyramidal tracts. 5. The prognosis of infectious encephalitis is extremely uncertain. 6. In the therapy, nursing and particularly the diet are of greatest significance.

**Rare Manifestation of Tuberculous Infection.**—Ochsenius reports a case in which a reddish infiltration that gave the impression of erysipelas developed on the forehead of a boy, aged 4 years. The mother stated that the child had suffered from a high temperature for three days and that, after the temperature subsided, spots appeared on the forehead and had spread, leaving only stripes later on. At the time medical aid was asked a second attack had just passed, and three more followed. The course was always the same, except that during the last attack the infiltration spread to the body, particularly to the back and arms. The author gives the leukocyte count during this last attack and admits that the interpretation of the condition was at first difficult, until the anamnesis gave a clue. The child's grandfather, who lived with the family, had pulmonary tuberculosis and died of it during the period the boy had the intermittent attacks. The tuberculin reaction was strongly positive in the boy and roentgenoscopy revealed a considerable enlargement of the hilus glands, partly with calcium deposits. The therapy consisted of the administration of roborant medicines and of inunctions with a tuberculin in an ointment base. These inunctions were given from two to four times monthly and were continued for twenty-one months. The treatment was successful in that the attacks of fever ceased and the red spots developed only a few times and were not followed by infiltration. The author considers the condition an allergic manifestation in the course of a tuberculous infection.

## Münchener medizinische Wochenschrift, Munich

**80:** 205-244 (Feb. 10) 1933

Foundations of Therapy. L. von Krehl.—p. 205.
Roentgenologic Demonstration of Cardiac Aneurysm. F. M. Groedel.—p. 210.
*Reinjection of Own Blood Following Its Irradiation. A. Braun.—p. 211.
House Allergens as Cause of Chronic Dermatoses and Mycoses. E. Urbach.—p. 212.
*Thrombophlebitic Sepsis Following Tonsillitis with Influenza Bacilli in Blood. H. Frank.—p. 214.
Erroneous Diagnoses of Appendicitis. E. Seifert.—p. 215.
Postoperative Stimulation of Peristalsis and Treatment of Atony. P. Caffier.—p. 219.
Treatment of Fracture of Ankle Joint According to Böhler. H. Schneider.—p. 222.
Histamine Iontophoresis. V. Schenck.—p. 223.
Base Holder for Martin's Anthropometer. W. Thomsen.—p. 224.

**Reinjection of Own Blood Following Irradiation.**—Braun gives a brief report of experiments that were made to determine whether direct irradiation of the blood with the quartz lamp would improve the results of autohemotherapy. On the basis of observations made up to now, he reaches the following conclusions: 1. Irradiation of the blood serum has no influence on the number of erythrocytes; consequently the active substance must be in the erythrocytes. 2. The action becomes manifest only after an irradiation of considerable intensity (five minutes' duration at a distance of 30 cm.), and this indicates that the substance is liberated by the irradiation.

3. The nearly identical results following intramuscular and intravenous reinjections prove that such a substance is liberated. 4. The point of attack for this substance must be in the spleen, because there was no result in the absence of the spleen.

**Posttonsillitic Thrombophlebitic Sepsis with Influenza Bacilli in Blood.**—Frank reports a typical case of thrombophlebitic sepsis that developed after a tonsillitis with bilateral tonsillar abscesses and with early pulmonary infarcts that simulated the clinical aspects of pneumonia. The interval between the tonsillitis and the beginning of the sepsis is not entirely unusual. However, it is not typical that the pulmonary manifestations predominated, and for this reason it was at first difficult to differentiate the condition from a pulmonary disturbance, although the physician in charge was well acquainted with the aspects of posttonsillitic sepsis. Since influenza bacilli were found in the blood as well as in the pleural empyema, it cannot be doubted that they played an essential part. The fact that only influenza bacilli were found in the blood is considered proof by the author that the influenza bacilli caused not only the complications but the entire disease process, the more so since the literature reports two other cases of thrombophlebitis caused by influenza bacilli, although in regard to the port of entry and the site they differed from the reported case. The postmortem examination corroborated the thrombophlebitis, the septic pulmonary metastases and the peritonsillar abscesses.

## Wiener klinische Wochenschrift, Vienna

**46:** 193-224 (Feb. 17) 1933

Infection and Disease, Allergy and Immunity. F. Hamburger.—p. 193.
*Obliteration Therapy of Varicose Veins. G. Nobl and M. Wolf.—p. 198.
Circulatory Disturbances and Working Capacity. R. Hift.—p. 200.
Casuistics on Chronic and Essential Thrombopenia. E. Hausner.—p. 204.
*Clinical Value of Complement Fixation Reaction in Gonorrhea in Men. R. Chwalla.—p. 206.
*Diagnosis and Therapy of Gallstone Disease. C. Ewald.—p. 210.
Technic of Proctosigmoscopy. W. Zweig.—p. 211.

**Obliteration Therapy of Varicose Veins.**—On the basis of their own observations and of statistical reports covering many thousands of cases, Nobl and Wolf feel justified in asserting that in the hands of the experienced physician the obliteration therapy of varicose veins involves no dangers and therefore can replace the surgical interventions. They found that the injection of solutions of dextrose brings better results than the injection of solutions of sodium chloride. They admit that a few fatalities have occurred, but they think that careful selection and exact technic will avoid fatalities in the future.

**Complement Fixation Reaction in Gonorrhea.**—Chwalla shows that the results of the complement fixation reaction vary considerably according to the type of antigen used. This was proved by the experiences of Engelhardt and Summent, who sent twenty-four serums to six different investigators and received identical results in few of the cases. The author had similar experiences in 110 cases of gonorrhea. The complement fixation tests were done in two different laboratories, and in only sixty-eight cases was there complete or almost complete identity of the results, which shows that there is a wide margin of error. In view of the comparatively small material studied by the author, he does not feel justified in making a definite statement about the prognostic value of the complement fixation reaction, but he is inclined to doubt it. A constantly negative reaction means only that complement fixing substances are absent. Many consider a negative reaction an unfavorable sign, but the author does not think so, even in cases of chronic complications. He shows that the complement fixation reaction is not reliable in the diagnosis of a latent gonorrheal infection or in the differentiation between new infection and relapse. He thinks that, aside from being an aid in the differential diagnosis of certain cases, the complement fixation reaction has little practical significance. However, he thinks that institutions which have the necessary facilities should employ it regularly, because it is interesting and in some instances it complements and supports the other clinical methods.

**Diagnosis and Treatment of Gallstone Disease.**—Ewald shows that the diagnosis of cholelithiasis, as compared to that of urolithiasis, is still backward and difficult, because the diagnostic methods introduced recently are so complicated that they cannot be employed in cases in which they are most needed. In discussing the treatment of cholelithiasis the author emphasizes the value of an early operation. He states that he has obtained favorable results by operating during the attack. He asserts that at this time the intervention is much simpler than if the intervention is made after the inflammatory infiltrations have become contracted scars. To the objection that relapses are likely, he replies that relapses occur in urolithiasis even more frequently than in cholelithiasis but that this objection is not raised against interventions on the bladder, ureters or kidneys. In urology the danger of pyelonephritis is considered greater than the relapse of the lithiasis, and he thinks that this is equally true for cholelithiasis. That cholangiohepatitis is not so readily recognized and takes a more insidious course is certainly no reason for disregarding it. Moreover, the diagnosis of relapse of lithiasis is frequently made erroneously, because it is extremely difficult to detect calculi in the gallbladder. The author found microscopic examination of the native bile withdrawn by puncture helpful in the detection of biliary concretions.

## Hospitalstidende, Copenhagen

**75:** 1411-1438 (Dec. 15) 1932

*Investigation on Course of Phosphate Elimination in Salyrgan Diuresis and Purine Diuresis. A. Yde.—p. 1411.
Nosocomial Suicides in Denmark's Hospitals for Insane from 1922 to 1931. C. Clemmesen.—p. 1421.
Measurements of Temperature with Thermal Element in Short Wave Field: Preliminary Report. O. Brinch.—p. 1432.
Case of Poisoning with Oil of Eucalyptus. P. Vogt-Møller.—p. 1434.

**75:** 1439-1466 (Dec. 22) 1932

Light and Medical Science. C. E. Bloch.—p. 1439.
*Investigation on Course of Phosphate Elimination in Salyrgan Diuresis and Purine Diuresis. C'cn. A. Yde.—p. 1448.
Investigations on Kahn's "Presumptive Test." H. Boas and Elvira Øigaard.—p. 1460.

**Phosphate Elimination in Salyrgan Diuresis and Purine Diuresis.**—Yde's results showed a reduced phosphate elimination appearing from one to two hours after injection of salyrgan and lasting from two to three hours. The twenty-four hour elimination of phosphate and the plasma phosphate were not affected. The administration of theophylline did not influence the phosphate elimination but caused a reduction in the plasma phosphate.

**75:** 1467-1478 (Dec. 29) 1932

*Two Cases of Tumors in Ischium, with Recovery After Interilio-Abdominalis Amputation and Extirpation. F. Djørup.—p. 1467.
Investigation on Muller's Conglobation Reaction No. II. H. Boas and Elvira Øigaard.—p. 1476.

**Tumors in Ischium.**—Djørup's first patient, a man aged 37, with osteosarcoma of the inferior ramus of the ischium for which an interilio-abdominalis amputation was performed, was well when examined after three years. The second patient, a girl aged 13, showed neither subjective nor objective symptoms fifteen months after the extirpation of an enchondroma, the size of a fist, in the inferior ramus.

## Ugeskrift for Læger, Copenhagen

**95:** 159-188 (Feb. 9) 1933

*Simple Achylous Anemia After Gastro-Enterostomy and Partial Stomach Resection. E. Meulengracht.—p. 159.
Temperature in Stomach, Esophagus and Pharynx: I. Under Normal Conditions. J. Foged.—p. 163.
*Open Pulmonary Tuberculosis in Children with Especial Reference to Average Length of Life. V. Poulsen and A. O. Andersen.—p. 169.
"Thyroid Test" by Injection of Urine in Rabbits. H. Nielsen.—p. 172.

**Simple Achylous Anemia.**—Meulengracht says that the grave anemias which in certain cases appear after this disturbance correspond in hematologic picture and otherwise to the usual simple achylanemia. Functional tests in such cases give results like those in achylia. It is difficult to determine whether the achylia is true, i. e., due to cessation of secretion, or apparent, i. e., due to inflow of alkaline fluid from the intestine and hastened emptying. Functionally, however, achylia is present and is assumed to be the cause of the anemia.

**Open Pulmonary Tuberculosis in Children.**—Poulsen and Andersen supplement Hasle's report on older children (*Ugesk. f. læger* **94:**1231 [Dec. 22] 1932) with their experiences in a material of 622 Pirquet positive children mostly under the age of 4 years, in 199 of whom tubercle bacilli were established. They find the prognosis grave for infants with tubercle bacilli in the stomach lavage water, but about one half apparently recover; in the second year of life the prognosis is far better; in the third and fourth years, good.